

Contract Management

Managing Conflict Escalation in the Dutch Building Sector



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Managing Conflict Escalation in the Dutch Building Sector

By

W.T.A.M Eitjes

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Chairwoman:

Prof. dr. ir. M.H. Hermans TU Delft

Thesis Committee:

Dr. ir. R. Vrijhoef TU Delft

Drs. M. Leijten TU Delft

M. Voorham MFM Rijksvastgoedbedrijf

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Preface

The completion of this thesis is the final step towards finishing the master Construction, Management and Engineering at Delft University of Technology. It started when I was looking for a topic to graduate on, and I saw the option in the newsletter to conduct research in the direction of contract management. After the first meeting with the supervisors the combination of the topics contract and conflict management seemed like a good fit. I believe it worked out well in the end, although I sometimes wondered during the course of my research if I should not have had a different study as background

During my research, I was an intern at the Rijksvastgoedbedrijf, and I would like to thank them for this opportunity. A special thanks to my company supervisor Martijn Voorham, who had always time to discuss things and brought me contact with the right persons. Subsequently I would like to thank all the colleagues who were willing to make time and share their experiences and insights during the interviews. Additionally, I would like to thank all those not working for the Rijksvastgoedbedrijf who participated in the interviews and survey.

Furthermore, I would like to thank my graduation committee of the TU Delft for their guidance and feedback.

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*Wouter Eitjes
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Glossary

- **Attitude and behaviour:** how individuals behave, interact with each other, deal with a situation and pose themselves during a disagreement.
- **Attitude and behavioural conflict:** conflict caused by the attitude and behaviour of the involved individuals.
- **(Conflict) Escalation:** the development of a disagreement into a conflict, claim, and later into a dispute.
- **Claim:** disagreement as an extension of a conflict, which comes into effect to recover the loss. It cannot be resolved by mutual agreement and become construction disputes.
- **Conflict Management:** the process of limiting the negative aspects of conflict while increasing the positive aspects of conflict. The aim of conflict management is to enhance learning and group outcomes, including effectiveness or performance in organizational setting.
- **Conflict Process:** the process of the arising of a functional conflict till the escalation into a dispute.
- **Conflict:** a serious difference between two or more beliefs, ideas, or interests, and it seems impossible for them to coexist or each to be true.
- **Conflict Factor:** factors that influence the entire conflict process, from the cause of the disagreement till the escalation towards a dispute. Distinguishable in three main categories, namely project, process and social.
- **Dispute:** a serious difference between two or more beliefs, ideas, or interests, and it seems impossible for them to coexist or each to be true. It is associated with distinct justiciable issues, and requires a third party to solve it, as the parties are unable to solve it themselves.
- **Dysfunctional Conflict:** dysfunctional conflict when the social factors influence the conflict approach of the involved parties. A dysfunctional conflict is not only about the issue at hand, also other factors need to be dealt with. The conflict is destructive, may further escalate towards a claim or dispute and can have residual effects.
- **Escalation Factor:** factors that influence the escalation process of disagreements and conflicts.
- **Functional Conflict/disagreement:** only arise as a combination of a task and process factor. There will be a disagreement about the responsibility, or the solution of the occurred situation. The discussion is constructive and about the issue at hand. Both parties try to reach a solution that may lead towards goal achievement.
- **Human Aspect:** factors that influence the attitude and behaviour of those involved, related to personality, trust, atmosphere, continuity, personal conflict preference, competences, and personal interests.
- **Interest conflict:** extension of a disagreement caused by the divergent interests of the client, contract and stakeholders.

- **Past Performance:** experiences of the past, related to the tender & contract phase and the ongoing conflict.
- **Process factors:** related to the conditions of the collaboration that are set during the pre-construction phase. This entails the contract documents and the actions and decisions made during the tender phase that give shape to the collaboration. The factors can lead to divergent views on the responsibilities and rights of the involved parties.
- **Risks:** factors that are unknown or unknowable at the start of the project and if occurred they could have negative consequences.
- **Social factors:** the factors that influence how the involved parties approach the conflict. They are related to the individuals participating in the conflict process, and the interests of both the parties.
- **Systeemgerichte contractbeheersing (SCB):** is a method for contract management that is applicable for different contract forms. It is a risk based method that focusses on the quality assurance system of the contractor and the underlying processes. The aim is to reach to required quality for the contracted activities.
- **Task/project factors:** the events, situations, and actions of either party related to the actual project work that takes place during the Design and Build phase, which contribute to the conflict process.

Management Samenvatting

Belangrijk in het managen van contracten is het omgaan met verschillen van meningen tussen de betrokken partijen. Meningsverschillen kunnen escaleren wanneer deze niet zorgvuldig worden aangepakt, wat ervoor kan zorgen dat arbitrage of een rechtszaak nodig is om tot een oplossing te komen. Dit leidt tot extra kosten, vastlopende communicatie en een toename van vijandigheid wat ertoe leidt dat de relatie tussen de partijen verslechtert. Dit heeft ook effect op de lange termijn doordat de relatie ook toekomstige meningsverschillen beïnvloed.

Contractmanagement speelt een belangrijke rol in het beheersen van contracten en daardoor in het voorkomen en omgaan met conflict escalatie. Het vakgebied van contractmanagement is onderscheidender geworden van projectmanagement in projecten met een geïntegreerd contract. Maar omdat het vakgebied van contractmanagement nog een relatief nieuw concept is, moet er meer onderzoek naar gedaan worden om het vakgebied en de mogelijkheden ervan beter te definiëren.

Dit leidt tot de hoofdvraag die dit onderzoek beantwoordt:

Welke interventies binnen het vakgebied van contractmanagement beïnvloeden de factoren die de besluitvorming van opdrachtgever en opdrachtnemer bepalen, zodat de negatieve impact van de escalatie van meningsverschillen en conflicten beperkt wordt?

Het onderzoek beperkt zich tot het perspectief van de opdrachtgever, en de conflict (escalatie) die plaatsvindt in de design and build fases van een project met een geïntegreerd contract.

Tijdens dit onderzoek zijn 12 hoofd escalatie factoren gevonden, te vinden in Table 1, die bestaan uit 28 sub-factoren. Deze factoren kunnen positief (voorkomen van escalatie) of negatief (zorgend voor escalatie) werken.

Table 1: Hoofd Escalatie Factoren

Houding en Gedrag (menselijke aspecten)		Strategische Keuze
Vertrouwen tussen de partijen	Persoonlijke belangen	Belangen Stakeholders
Betrokken persoonlijkheden	Competenties	Belangen van het project
Continuïteit	Atmosfeer	Past Performance
Persoonlijke omstandigheden	Persoonlijke conflict voorkeur	Contractvoorwaarden en procedures

Drie types van conflicten werden op basis hiervan gevonden, namelijk belangen, houding en gedrag en dysfunctionele conflicten.

- Belangenconflicten worden veroorzaakt door een uiteenlopende belangen van de opdrachtgever, opdrachtnemer en stakeholders. Dit belangen worden beïnvloed door de invloed en verantwoordelijkheid voor de oorzaak van het meningsverschil, de past performance en de contractvoorwaarden en procedures.
- Houding en gedrag conflicten worden veroorzaakt door de menselijke aspecten en beïnvloed door de contractvoorwaarden en wat er in het verleden gebeurd is (past performance).
- Dysfunctionele conflicten vinden plaats wanneer er zowel de belangen als houding en gedrag een rol spelen. Om dit conflict op te lossen, moet eerst het menselijke aspect opgelost worden, voordat de belangen en de daadwerkelijke oorzaak van het conflict kunnen worden opgelost.

Deze conflicten leiden tot twee manieren van escalatie, namelijk gedreven door de belangen, of door een combinatie van belangen en de houding en gedrag van individuen. De laatstgenoemde escalatie kan niet worden opgelost totdat eerst met het menselijke aspect is omgegaan, daarna kan er pas een oplossing gezocht worden.

Een belangen gedreven escalatie kan opgelost worden wanneer de oplossing rekening houdt met de verschillende belangen, maar het kan ook verder escaleren wanneer de belangenverschillen niet overbrugbaar zijn. In Figure 1 zijn deze twee soorten escalatie weergegeven.

Door het creëren van coöperatieve interactie tussen de partijen wordt de kans verkleint dat meningsverschillen escaleren en het zorgt ervoor dat problemen tot ieders tevredenheid kunnen worden opgelost. Dit leidt ertoe dat er geen dysfunctionele conflicten plaatsvinden en dat partijen elkaars belangen in acht nemen.

In dit onderzoek is een nieuwe definitie voor coöperatieve interactie geformuleerd, namelijk:

Coöperatieve interactie is naar een gezamenlijk doel toewerken, met in acht nemend van elkaars belangen en doelen, door mee te denken en elkaars (probleemoplossing) processen te ondersteunen zonder hun verantwoordelijkheid over te nemen.

Om deze interactie te bewerkstelligen zijn dertien hoofd interventies geformuleerd gebaseerd op de theoretische en praktische interventies die gevonden zijn gedurende het onderzoek. Deze interventies creëren de benodigde omstandigheden voor de coöperatieve interactie en verkleinen de kans dat belangenconflicten zullen escaleren. De interventies zijn:

- Draag zorg om wrijving op een persoonlijk niveau tussen de betrokken personen te voorkomen, signaleer en bespreek het zo snel mogelijk.
- Zorg ervoor dat beiden partijen een goede teamsamenstelling hebben.
- Creëer een “wij samen” en niet “wij tegenover zij” cultuur.
- Creëer vertrouwen tussen de partijen.
- Zorg ervoor dat de contractvoorwaarden als rechtvaardig worden opgevat.
- Draag zorg voor de continuïteit in de projectteams.
- De lange termijneffecten van acties worden in acht genomen.
- Zorg ervoor dat problemen klein gehouden worden met een beperkte invloed op de belangen en doelstellingen van beide partijen, door dit in een vroeg stadium op te merken en mee om te gaan en snel eens te zijn over de inhoud van het meningsverschil.
- Handel in de geest van het contract.
- Kijk objectief naar wie er verantwoordelijk is voor de oorzaak van het meningsverschil.
- Wees bewust van de belangen en doelen van de andere partij.
- Zorg ervoor dat de opdrachtgever en overheidsstakeholders op dezelfde lijn zitten.
- Maak duidelijke afspraken met het eigen projectteam en de opdrachtnemer over hoe een meningsverschil wordt aangepakt.

De interventies die te maken hebben met de projectteams vallen gedeeltelijk binnen contractmanagement, terwijl de andere er volledig binnen vallen. In totaal zijn er 78 praktische interventies gevonden die gerelateerd zijn aan deze hoofdinterventies, en deze kunnen worden toegepast afhankelijk van de context van het project.

Het is nog steeds mogelijk dat ondanks deze interventies meningsverschillen zullen escaleren omdat er meningsverschillen kunnen zijn waar de belangenverschillen te groot zijn. Echter wanneer er coöperatieve interactie is tussen de partijen kan dit meningsverschil met wederzijdse goedkeuring (sneller) worden geëscaleerd, zodat het meningsverschil hoger in de organisatie of met behulp van een derde partij kan worden opgelost. Dit zal zorgen voor een vermindering van de anders gemaakte transactiekosten en beperkt de schade aan de relatie tussen de partijen.

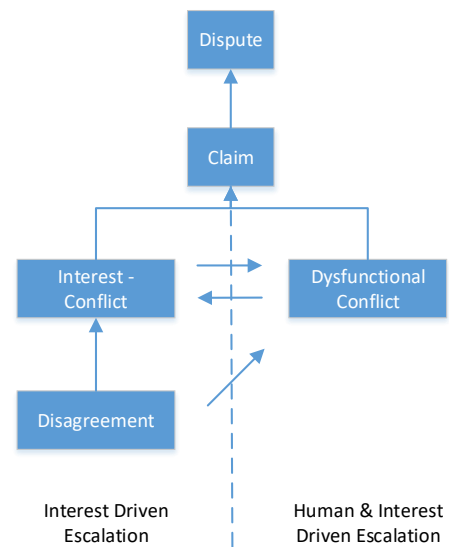


Figure 1: Twee soorten escalatie

Executive Summary

Crucial in governing contracts is the handling of differences in opinions that may arise between involved parties during the contract life cycle. These differences may escalate if not handled carefully, requiring litigation or arbitration to solve them. This can lead to increased project cost, breakdown in the parties' communication, increase in hostility and damage the relationship between the parties. The damage to the relation can have long term effects which will influence future disagreements. The detrimental effects of those conflicts can also be observed in several "fighting contracts" that revealed the last couple of years. This is something the building sector as whole would like to prevent in the future (Bouwend Nederland, 2016).

Contract management plays a key role in governing the contracts and therefore in preventing and handling escalation. The field of contract management has become more distinguishable from project management in projects with an integrated contract. Since contract management is still a relatively new concept, more research in the field needs to be conducted to better define the field itself and its possibilities.

This leads to the main question this research answers:

Which interventions, within the area of influence of contract management that influence the factors effecting the decision making of the client and contractor, reduce the negative impact of the escalation of disagreements and conflicts?

The research is limited to the perspective of the client and the conflict (escalation) that takes place during the design and build phase of a project with an integrated contract in the Dutch building sector.

In this research 12 main escalation factors (Table 2) consisting out of 28 sub-factors were found. These factors can work positively (preventing escalation) or negatively (causing escalation).

Table 2: Main Escalation Factors

Attitude & Behaviour (Human Aspects)		Strategic Choice
Trust between the parties	Personal Interest	Stakeholder Interest
Involved Personalities	Competences	Project Interest
Continuity	Atmosphere	Past Performance
Personal Circumstances	Personal Conflict Approach	Contract Terms and Procedures

Three types of conflicts were found based on this, namely the interest, attitude and behavioural, and dysfunctional conflicts.

- Interest conflicts are caused by a divergence of interests between the client, contractor and involved stakeholders. Influenced by the impact and responsibility of the cause of the disagreement, the past performance during the contract phase and current disagreement, and the contract terms and procedures.
- Attitude and behavioural conflicts are caused by the attitude and behaviour of those involved, which is influenced by the human aspects together with the contract terms and procedures, and the past performance.
- Dysfunctional conflicts take place when both the attitude and behaviour and the interest conflict take place. To solve this conflict, first the human aspect needs to be handled, before the interests and the actual content of the issue can be dealt with.

The conflicts lead to two types of escalation, depicted in Figure 2, namely the interest driven and human & interest driven escalation. The human & interest driven escalation will continue to escalate till the human aspects have been dealt with. The situation can then be solved, unless it continues to escalate due to the significant divergent interest.

Cooperative interaction reduces the chance that disagreements will escalate, and makes it possible that situations are resolved to mutual satisfaction. When there is cooperative interaction between the parties, there will not be any dysfunctional conflicts and parties are willing to consider each other's interests.

In this research, a redefinition of this type of interaction is given: *“Cooperative interaction is working towards a common goal while considering each other's interests and objectives, by thinking along with the other party and facilitating their (problem solution) process, without taking the other's responsibility.”*

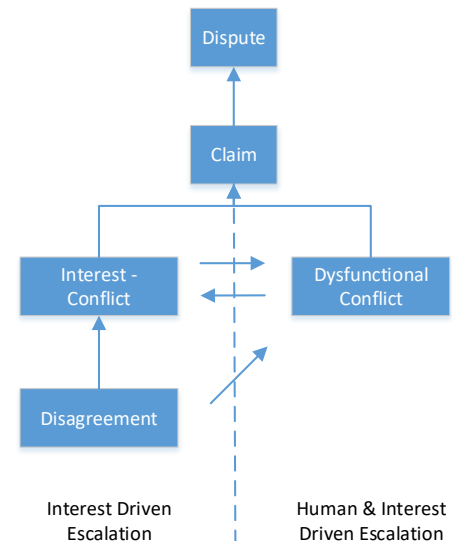


Figure 2: Two types of Escalation

Thirteen main interventions were formulated to be able to achieve this kind of interaction based on the theoretical and practical interventions found during the research. These interventions will create the conditions required for cooperative interaction and reduce the chance that conflicts will escalate due to divergent interests of the involved parties. The interventions being:

- Work to avoid friction on a personal level between the involved individuals, signal, and deal with it as soon as possible.
- Have the right (mixture of) people in both teams
- Create a "we together" and not "we vs them" culture.
- Create trust between the parties.
- Have contract terms that are considered fair.
- Ensure there is continuity in the project team.
- Consider the long terms effects of actions.
- Keep issues small with a limited impact on interests and objectives of both parties by agreeing on the content of the issue, and noticing and dealing with issues in an early stage.
- Act in the spirit of the contract.
- Objectively look at who is responsible.
- Awareness of the objectives and interests of the other party.
- Ensure that client and governmental stakeholders follow the same line.
- Make clear agreements with your own team and the contractor on how disagreements and conflicts will be managed.

The interventions regarding the project teams are partly within the area of influence of contract management, while the others are completely. In total, 78 practical interventions were found that are related to these main interventions, and these can be applied depending on the context of the project.

It is still possible that disagreements and conflicts will escalate despite these interventions, as there can be issues for which the divergent interests prevent a solution from being found. However, if there is cooperative interaction between the parties, this issue can (quickly) be escalated with mutual consent allowing someone higher in the organisation or with the assistance of third party can be solved. This will reduce the transactional cost and the harm done to the relation between the parties.

1

Introduction

Integrated contracts are used in the built environment to arrange the formal relation between the client and contractor during building projects. In these types of contracts, several phases of a project lifecycle are combined. Such that this facilitates a combination of the design, build, finance, maintenance, and operation phase can be incorporated in the same contract under the uniform UAV-GC conditions. The use of integrated contracts (compared to the traditional contract types), led to a change as to how projects are governed by the client, as the traditional contract consists of only one contract phase under the UAV uniform conditions.

The field of contract management has become more distinguishable from project management in projects with an integrated contract, and it is used to govern the contract. Since contract management is still a relatively new concept, more research in the field needs to be conducted to better define the field itself and its possibilities.

Crucial in governing contracts is the handling of differences in opinions between involved parties of the contract that may arise during the contract life cycle. These differences, if not handled carefully, may escalate requiring litigation or arbitration to resolve them. This can lead to increased project cost and a breakdown in the parties communication and relationship (Harmon, 2003).

The detrimental effects of those conflicts can also be observed in several “fighting contracts” that revealed the last couple of years. This is something the building sector as whole would like to prevent in the future (Bouwend Nederland, 2016). Besides, as more work is awarded to the same party, and integrated contracts normally have a longer duration, the dependency between the client and contractor increases.

This research will identify the factors that lead to the escalation of disagreements, and the interventions into the escalation process that fall within the area of influence of contract management. The findings will be limited to the conflicts that arise in the design and build phase of a project with an integrated contract in the Dutch building sector.

1.1 Problem Definition

Escalated disagreements can result in an increased hostility between the parties and damage the relationship. This damage to the relation can have long term effects, as it will influence future disagreements. In future disagreements, the conflict residue of previous conflicts (see Figure 3) will influence the decision making, making them escalate sooner (Groton, 1997).

Moreover, two of the failure factors of projects are the conflicts and the atmosphere of distrust that are present in the project (Kamminga, 2009). The escalation leads to increasing amounts of transactional costs, due to the time and effort both parties have to put into the conflict, and the involvement of third parties trying to solve the situation (Gebken & Gibson, 2006). Lastly, escalated conflicts may damage the public image of the organisation and decrease the satisfaction people have in their work. It is thus important to prevent the escalation of disagreements, and that if they do, they have a limited negative impact on the relation and can be resolved quickly to reduce the transactional cost.

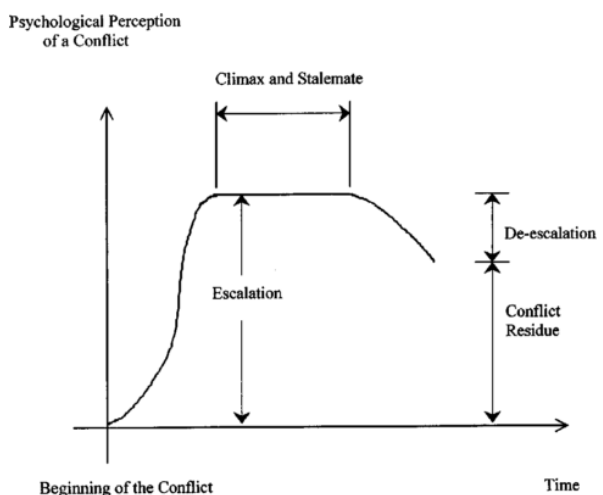


Figure 3: Psychological Perception of a Conflict (Groton, 1997)

1.2 Scope of the Research

The research focuses on the Dutch building sector and the differences in culture and legislation between countries will not be considered. Therefore, the results will be valid for the Netherlands only.

There can be differences between infrastructure and real estate projects, related to the project location (impact on environment, size, public visibility) and the stakeholders that are involved. These conditions can have an influence on the factors at play during a project. As this research is conducted at the Rijkswastgoedbedrijf, the findings will only be applicable to real estate projects.

Conflicts are not one-sided. Both sides have an impact and opinion about them. However, this research limits itself to the client side. This because the client creates the pre-conditions for the project (drawing up the contract, award-criteria, selection of parties) and has therefore a prime role.

Conflicts occur for projects with both traditional and integrated contract. In this research only that that occur during an integrated project will be studied. The contract type has an influence on the parties that are involved. For a traditional contract the design and construction are generally done by two different parties, while an integrated project is conducted by the same party. Furthermore, the traditional and integrated contracts have each their own set of uniform conditions, and a different way of specifying the requirements. Due to the greater mutual dependency of integrated contracts, and a more distinguishable field of contract management for these contracts, these will be the focus of the research.

There is a distinct separation between the design & build and the maintenance & operation phase in the management of the project. Besides, there are differences in solution space, budget, time, and involved stakeholders. All this can have an impact on the conflict process and therefore the phases cannot be considered as one. As the design & build phase is assumed to have a predominant impact on the project, the conflicts in this phase will be considered.

1.3 Research Objective

In the problem definition, it was stated that conflicts can have a significant negative effect during a building project. It is important to prevent the escalation of disagreements, and in case of escalation, that it has limited negative impact on the relation between the parties. Furthermore, this means that disagreements and conflicts should be resolved relatively quick to reduce the transactional cost.

Contract management plays a key role in governing the contracts and therefore in preventing and handling escalation, and it should be defined what the interventions in the escalation process are that fall within the area of influence of the field to improve the understanding of the field. This leads to the main objective of the research:

The aim of the research is to identify the intervention opportunities in the escalation process within the area of influence of contract management as practised by the client which will mitigate the impact of the conflicts between client and contractor during the design and build phase of integrated building projects in the Netherlands.

The Rijksvastgoedbedrijf indicated that they are not interested in a step to step guide, but rather gain a better understanding of the escalation of conflicts, and the prevention possibilities.

1.4 Research Questions

The following main question is formulated:

Which interventions, within the area of influence of contract management that influence the factors effecting the decision making of the client and contractor, reduce the negative impact of the escalation of disagreements and conflicts?

Limited to contract management as applied by the client and the conflict (escalation) that takes place during the design and build phase of a project with an integrated contract in the Dutch building sector, as discussed in paragraph 1.2. The main question is decomposed into several sub-questions of which in Figure 4 the relation between the different elements is shown.

What are the conflict escalation processes?

The conflict escalation processes during conflict situations need to be identified before interventions can be formulated. It could be possible that there are different processes which have different related interventions

Which factors influence the conflict escalation process between client and contractor during building projects with an integrated contract in the Netherlands?

The factors that influence the conflict escalation processes (choice for conflict management style) will need to be identified so that corresponding interventions can be found.

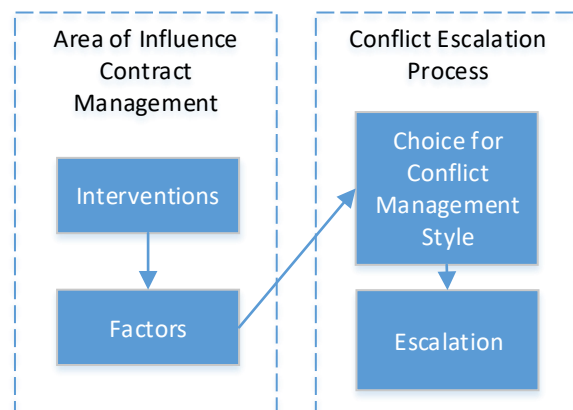


Figure 4: Relation between research elements

Which conflict management style(s) should be used to prevent conflict escalation?

There are several conflict management styles that can be used to deal with conflict situations. Identifying which styles do not lead to conflict escalation will indicate what the aim of the interventions should be.

What is the area of influence of contract management as practiced by the client during the contract life cycle?

The area of influence of contract management will need to be defined so that in the next stage interventions that are within the area of influence of contract management can be identified.

Which potential interventions for the identified factors can be used during the pre-contract and design & build phase of a project with an integrated contract?

Interventions for the identified factors that influence the choice of conflict management style need to be found. The intervention will thereby influence whether a conflict will escalate. Intervention in both the design and build, as in the pre-contract phase will be considered.

Which interventions contribute to preventing conflict escalation during the design and build phase of a project with an integrated contract?

The found interventions will need to be validated if they are feasible and will contribute to preventing conflict escalation.

1.5 Methodology

The research approach will consist of three main methods, namely a literature review, face-to-face interviews, and case studies. Figure 5, shows the research framework with the different consecutive steps. The framework will be explained in the following paragraphs.

1.5.1 Desk Research

As starting point a literature review will be done to gain insight on the subject and formulate the hypotheses that will be tested during the interviews. The topics are the area of influence of contract management, conflict management styles, conflict escalation process and factors. This will further define the problem and give the direction for the further research steps.

Hypotheses will be formulated based on the desk research and these will be tested during the interviews. The hypotheses are related to the conflict model (how does conflict escalation work) and what conflict management styles will lead to escalation.

1.5.2 Face-to-Face Interviews

Two sets of interviews are conducted, as the topics are too comprehensive to discuss in a single interview. One set will be aimed at the field of contract management, and the other at conflict escalation. The reason that interviews are being used is that it will allow to gain practical in-depth knowledge of the subject due to the possibility to ask follow-up question, while a survey would yield mostly quantitative results.

Contract Management

The theory on Contract Management will provide a framework for the interviews. The interviews will yield practical knowledge about the current application of the field of contract management. Leading to a definition of the area of influence that is based on by both literature as every day practice.

The interviews are done in collaboration with other students who are working on the topic of contract management. This will allow for a larger sample of contract managers to be interviewed in a brief time span. However, because it is a collaboration, the results will only be partly applicable for

this research and no in-depth questions can be asked about the relation between contract management and conflict escalation. With the results of these interviews the field of contract management can be better defined by analysing the differences between literature and practice (if any) and drawing conclusions based on that. This will be required to determine which interventions are within the area of influence of contract management later.

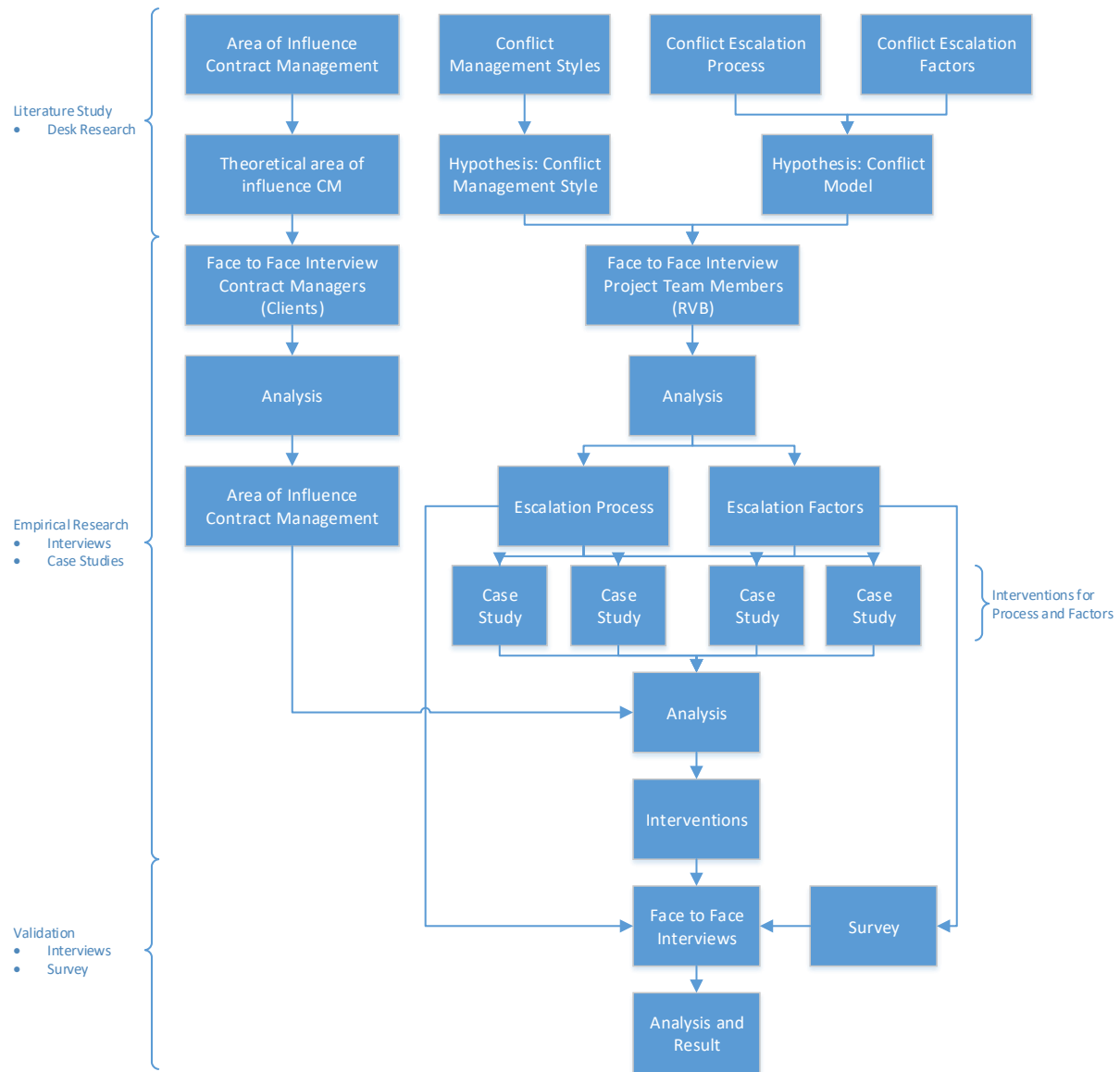


Figure 5: Research Framework

Conflict Escalation

The second series of interviews will consider the conflict model, escalation factors and the area of influence of the different project team members during conflict situations. The task division will allow to identify when the different roles are involved, and it will support the determination of the area of influence of contract management.

The underlying assumptions of the conflict model will be questioned/validated, leading to approval or adjustments of the model. This model will lead to the factors that are involved and the required interventions for preventing the escalation of disagreements and conflicts.

Furthermore, the occurrence of the identified conflict escalation factors in the desk research in practice will be determined, and if there are any factors that are still missing or need to be adjusted.

The interviews will be theoretical in nature and no specific conflicts will be questioned. The reason is that conflicts are a sensitive subject and people might not be willing to participate if actual conflicts are discussed. Furthermore, this allows to gain a broader perspective on the topic as the interviewees will not be limited to single conflicts, but can discuss the topic based on their experience gained in several projects. The interviews will be held with project, contract, technical managers, and an external expert to gain a broader perspective as the role of the interviewee might influence their perception/answers.

The results will lead to adjustment to the conflict model, and the formulation of the escalation processes. Furthermore, a more complete list of escalation factors can be drafted. This will indicate for what factors and processes interventions need to be sought during the next research step.

1.5.3 Case Studies

After the problem has been identified (the escalation factor and processes), intervention can be sought. This is done by means of several case studies of projects that with an integrated contract. The projects will need to have finished the design & build-phase or have progressed sufficiently so that conclusions can be drawn on the used intervention. In each case, interventions that were used to influence the identified factors are sought, and if in hindsight other interventions should have been taken.

Several project team members per project will be interviewed to gain different perspectives on the matter, and a document research is done. The documents could consist of project end-evaluations, conflict management systems, etc. The result will be a list of interventions for each of the identified conflict factors.

The results of the case studies, and interventions found in the literature/during previous interviews will be analysed for communalities, and it will be determined if these are within the area of influence of contract management. Main interventions will be formulated based on the performance of the project regarding conflicts, and the factors that are influenced by the interventions.

1.5.4 Validation Interview and Survey

The results of the research will need to be validated. This is done by means of two steps, namely a survey and face-to-face interviews.

Survey

The escalation factors will be tested by means of a survey in which professionals with conflict experience in the design and build-phase of an integrated contract will determine the impact of the factors. The reason that a survey is used for the factors is that the draft list is based on a limited number of interviews and the insight of the researcher. A broad perspective needs to be gained to prevent bias on the occurring factors. For example, while one interviewee might have experienced a certain factor, it might not mean that it is a factor that is generally observed. The survey will allow to root out incidents, and formulate a wider supported list of factors.

Face-to-Face Interviews

The escalation processes/models are drafted on the insights gained by the researcher during the literature study and interviews, requiring that the different assumptions are validated. Furthermore, the feasibility and whether the formulated interventions will contribute to intervening in the escalation process will need to be determined before a conclusion can be given.

1.5.5 Result

This research will define interventions within the area of influence of contract management that will contribute to preventing the escalation of disagreements and conflicts, and reduce the negative effects if escalation still takes place. To achieve this, the escalation process and the factors that influence this process will be defined. Furthermore, the conflict management styles and approach that prevent escalation will be given.

1.6 Reading Guide

The topics being described and discussed in this research are structured in the following way:

[Chapter 2](#) describes the theory on conflict escalation and management. Resulting in the identification of two types of conflicts, and the factors that are related to conflict (escalation) leading to a conflict model combining the different elements. Furthermore, two hypotheses on the relation between conflict management styles and conflict escalation and the related interaction between the parties are formulated.

[Chapter 3](#) combines the practical knowledge gained during interviews with the theory of chapter 2. This leads to the definition of the conflict processes and an addition to the conflict factors that are relevant to the escalation process. The changes to the conflict model based on these results are given and the validation of the hypotheses on conflict management and the interaction are discussed.

[Chapter 4](#) describes the theory on contract management leading to a theoretical definition of the area of influence of contract management.

[Chapter 5](#) combines the theoretical definition of the area of influence of contract management with the practical knowledge gained during interviews with contract managers.

[Chapter 6](#) describes the interventions into the escalation process based on theory, interviews, and case study results. A new definition for cooperative interaction is given with associated the interventions.

[Chapter 7](#) composes of the results of the validation of the research, based on a survey about the escalation factors and interviews about the formulated interventions. The changes to the factors and interventions that result of this are described.

[Chapter 8](#) consists of the conclusions, recommendations, the limitations of this research, and topics for further research are proposed.

2

Conflict Escalation According Literature

In this chapter, the various aspects of the conflict escalation process according to literature are discussed. In section 2.1 the conflict process and definitions of conflicts are given. Section 2.2 describes the criteria that influence the escalation potential. In section 2.3 the conflict factors related to the conflict process are discussed. Section 2.4 explains the difference between two main types of conflicts and in section 2.5 based on the previous discussed topic a new conflict model will be proposed. Section 2.6 further explains the conflict escalation process and section 2.7 discuss the conflict management aspects and hypotheses are formulated. Lastly, in section 2.7 the preliminary conclusions about the conflict factors, management styles and escalation processes are drawn.

2.1 Process and Definition of Conflict

Not in all literature about conflicts a distinction is made between the terms conflict and dispute, often the terms are used interchangeable. However, according to Fenn, Lowe, & Speck (1997) these terms are two distinct notations. A conflict can be defined as a serious difference between two or more beliefs, ideas, or interests and it seems impossible for them to coexist or each to be true. While a dispute is also associated with distinct justiciable issues, and requires a third party to solve it as the parties are unable to solve it themselves.

There are different types of conflict issues that can be distinguished (Pel & Emaus, 2007):

- **Conflict of interest:** about scarce resources or who is responsible to solve the problem.
- **Operational conflict:** about the execution of the work and these arise when no good agreements have been made.
- **Views and values conflict:** about differences in views/values, these are often hard to resolve and can lead to separation of ways.
- **Identity conflict:** about what people are, act and are related to personality and identity.
- **Metaconflict:** conflicts about what the conflict is about.

Acharya, Lee, & Im (2006) developed a conflict continuum model, which can be seen in Figure 6. This model describes the process of conflict arising and escalation into a dispute.

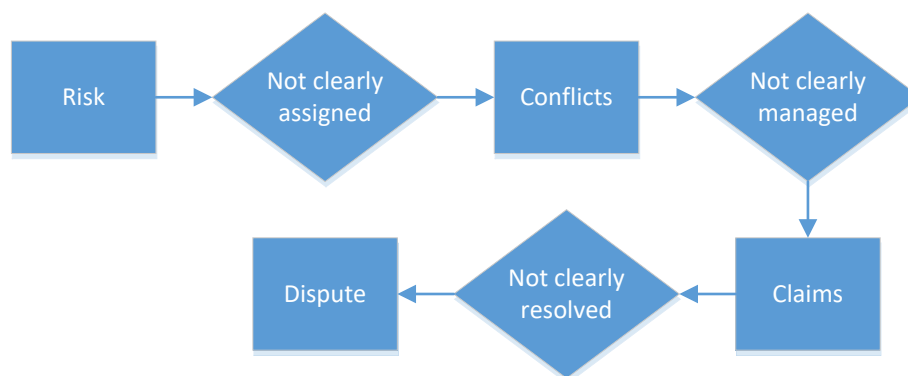


Figure 6: Conflict Continuum Model (Acharya, Lee, & Im, 2006)

In here, the risks are the factors that are unknown or unknowable at the start of the project and if occurred they could have a negative consequences (Mccallum, 2000). The risks, if not properly assigned can result in a conflict between the parties, that will lead to a claim if not managed well. A claim is a disagreement as an extension of a conflict, which comes into effect to recover the loss. It cannot be resolved by mutual agreement and become construction disputes (Barrie & Paulson, 1992).

2.2 Conflict Escalation

Often, when a conflict escalates, it is because one of the parties does not recognize that there is a problem. The original matter is than soon eclipsed by the anger about the procedures and actions of the other party. Escalation progresses from a situation of difficult collaboration, to an open clash and then involves into a trench war (Pel & Emaus, 2007). In the start, a party wants mostly to achieve their own goals, then when the conflict escalates, becomes more important to win from the other. This could further progress to simply wanting “to destroy” the other party (Deutsch, 1958).

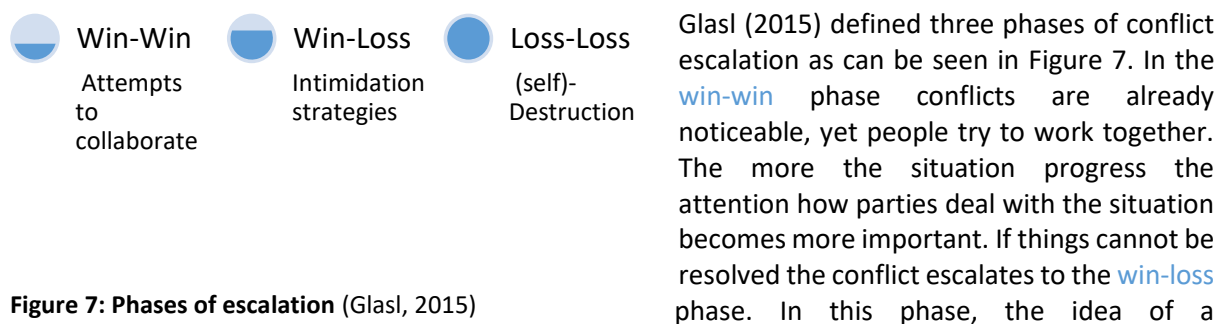


Figure 7: Phases of escalation (Glasl, 2015)

As the conflict further escalates the following things happen (Pel & Emaus, 2007):

- The number of conflict issues increases;
- Small issues become larger;
- Specific issues become more general and abstracter (“not having paid the bill” becomes “being unreliable”);
- The conflict issues with strong affective components increase (identity conflicts); and
- Parties do less often agree on what the conflict is about.

2.3 Criteria that influence the potential for Conflicts

Each conflict has a cause and factors that involve the arising and escalation of it. Diekmann & Girard (1995) identified three groups of characteristics that can influence the potential of a conflict taking place.

- **Project criteria**; consisting of both the internal variables inherent to the project (such as complexity and size) and the external related to the environment (such as public interference and project site)
- **Process hierarchy**; consisting of the pre-construction planning or those activities that are required before the contractor and owner make an agreement and sign the contract, and the construction contract, which defines the agreement between them.

- **People criteria of both the owner and contractor**; related to their experience, competences, interpersonal skills and so forth. It also includes the business relationship between the parties with regards to the power balance, team building effort, past events, and future work expectations.

It was found that the project criteria do not affect the disputes escalation to a great extent, and that while people do not cause conflicts, they have a great impact on the escalation process. The process criteria fall in between both other criteria.

2.4 Conflict Factors

The factors were found during a literature study to the sources of conflict during projects in the built environment. In the found studies, no distinction was made between the type and size of the project or the kind of contract used. Furthermore, the studies have been conducted in a variety of countries, which might or might not make them applicable for this research.

2.4.1 Different Groups of Causes of Conflict

Based on the conclusions of Diekmann & Girard (1995), the assumption could be made that there are different groups of factors, with each group having their own place within the conflict model. As mentioned, the people criteria cause escalation but do not cause conflicts.

Furthermore, conflicts do not arise due to a single factor taking place, it is due to a combination of factors that there is a conflict (Cheung & Pang, 2013; Mitkus & Mitkus, 2014; Semple, Hartman, & Jergeas, 1994). For example, if there are delays due to extreme weather, and in the contract, it is specified how to handle the effects, there will be no conflict unless the parties disagree about the fairness of the procedure. The event of extreme weather on itself is no direct reason for a conflict, only in combination with another factor it could lead to a conflict. This notion is not always considered in the research to the causes of conflict. Thus, a new categorization should be made between the different causes that are given in the literature, to better understand the effect the several factors on the conflict process.

Based on the research of (Chen, Zhang, & Zhang, 2014; Cheung & Pang, 2014; Diekmann & Girard, 1995) three main groups of factors can be distinguished:

- **Task factors**, the events related to the actual project work, and the related actions of either party during the design and build phase of an integrated contract
- **Process factors**, related to the conditions of the collaboration that are set during the pre-construction phase. This entails the contract documents and the actions and decisions made during the tender phase that give shape to the collaboration. The factors can lead to divergent views on the responsibilities and rights of the involved parties.
- **Social factors**, influence how the involved parties approach the conflict that is taking place, and whether it will lead to an escalation of a functional to a dysfunctional conflict.

In the next paragraphs the causes of conflicts found in the literature will be grouped based on these factors. The factors will be further divided within each group to form categories consisting of overlapping causes. In the following sections this is more fully explained.

2.4.2 Task Factors

The task factors are related to the actual project work, and the related actions of either party during the design and build phase of an integrated contract. Seven categories of overlapping causes could be created, each shall be explained briefly. In Appendix B: Conflict Factors the full list of related factors, and their sources can be found.

- **Quality**; the delivered quality does not meet the requirements set for the design, construction, or maintenance. For example, this can be caused by defects in the constructions, different construction techniques being used than set forth in the contract or errors in the design. (Acharya, Lee, & Im, 2006; Brooker, 2002; Cheung & Pang, 2013; Conlin, Lanford, & Kennedy, 1996; Jones, 1994; Kumaraswamy, 1997; Watts & Scrivener, 1993)
- **Change Orders**; changes made to the project after the contract has been awarded resulting in disagreement about the planning or budget. For example, the client orders extra work to be done without granting appropriate compensation or extra time. It could also have to do with cost reductions due to changes, and how this cost saving is divided among the parties. (Acharya, Lee, & Im, 2006; Bristow & Vasilopoulos, 1995; Cheung & Pang, 2013; Cheung, Yiu, & Chiu, 2009; Heath, Hills, & Berry, 1994; Hewitt, 1991; Kumaraswamy, 1997; Semple et al., 1994; Sykes & Sheridan, 1996; Watts & Scrivener, 1993; Yates, Asce, & Epstein, 2006)
- **Information**; the provided information does not match the actual situation on site. This can be caused by unforeseen or differing ground conditions at the construction site. Furthermore, unknown utility lines could be present or promised equipment is not available. (Acharya, Lee, & Im, 2006; Hewitt, 1991; Kumaraswamy, 1997)
- **Payment**; disagreement about the value of the work done and payment method. This has to do with the valuation of the progress of the project, delays in running bill payment or (unjustified) progress claims by the contractor. (Acharya, Lee, & Im, 2006; Brooker, 2002; Heath et al., 1994; Kumaraswamy, 1997)
- **Delay due to the client**; damages due to delays of the project caused by the (in)action of the client or third parties working for them. For example, due to a third party under the responsibility of the client delaying in work, late handover of the construction site or delayed availability of information. (Acharya, Lee, & Im, 2006; Cheung & Pang, 2013; Kumaraswamy, 1997; Yates et al., 2006)
- **Delay due to the contractor**; the contractor does not deliver the work according to schedule, requests for extension of time. For example, because of slow work of the contractor or delays falling within their responsibility. (Acharya, Lee, & Im, 2006; Brooker, 2002; Conlin et al., 1996; Hewitt, 1991; Watts & Scrivener, 1993)
- **Uncontrollable external events**; events that cannot be controlled by the project participants. This could be delays/damages due to extreme weather, change in government codes, union strikes or shortages of resources. (Acharya, Lee, & Im, 2006; Acharya, Lee, & Kim, 2006; Cheung & Pang, 2013; Kumaraswamy, 1997; Semple et al., 1994; Yates et al., 2006)

2.4.3 Process factors

The process factors are related to the conditions of the collaboration that are set during the pre-construction phase. This entails the contract documents and the actions and decisions made during the tender phase that give shape to the collaboration. The factors can lead to divergent views on the responsibilities and rights of the involved parties. While the task factors are related to the actual situation of the work, the process factors are related to how the project was envisioned before the work started. Two main categories were defined, in Appendix B: Conflict Factors the full list of related factors, and their sources can be found.

- **Tender phase**; actions and decisions in the tender phase that shape the collaboration between the parties. For example, inappropriate contractor selection, unrealistic tender pricing for the expected work (either set by the client or submitted by contractor) or incomplete tender information being provided. (Acharya, Lee, & Im, 2006; Brooker, 2002; Cheung & Pang, 2013; Conlin et al., 1996; Kumaraswamy, 1997)
- **Contract Document**; the contract sets the conditions for the collaboration between the parties. This includes all documents, among those that define the requirements and procedures. Ambiguities, inconsistencies, unfair risk allocation or disproportionate fines could all be factors that lead to a conflict. Furthermore, unrealistic expectations for time, cost or quality or unclear contract conditions about the respective rights, benefits and responsibilities can cause disagreement. (Acharya, Lee, & Kim, 2006; Bristow & Vasilopoulos, 1995; Kumaraswamy, 1997; Spittler & Jentzen, 1992; Yates et al., 2006)

2.4.4 Social factors

The social factors influence how the involved parties approach the conflict that is taking place. It includes a wide variety of factors based on which four main categories were defined, in B.3. Social Factors, the full list of related factors, and their sources can be found.

- **Interest**; due to several reasons, the interests of the project participants can differ from each other, and either be business or personal related. There is a wide range of different interests, an example of a personal related interest could be that the result of the conflict will have a direct impact on the career of the individual. A business-like interest could be the requirement to make a profit on the project. The current state of the economic, tendering pressures or the contractor financial positions could be factors that also contribute to the different interests of the participants. Furthermore, the requirements of the external stakeholders can also give influence the different interests (Bristow & Vasilopoulos, 1995; Cheung et al., 2009; Han, Diekmann, & Ock, 2005; Jones, 1994; Kumaraswamy, 1997).
- **Attitude**; the mindset of the individual project participants. Personality clashes or a competitive/ adversarial attitude of the involved individuals could influence their actions. Furthermore, the actions that are being taken by other parties can influence the mindset. (Cheung & Pang, 2013; Kumaraswamy, 1997; Mitkus & Mitkus, 2014; Spittler & Jentzen, 1992)
- **Competences**; the qualification of the project participants. The communication, management or professionalism of the involved individuals/parties can determine what actions are being chosen and how the other parties act (Acharya, Lee, & Im, 2006; Bristow & Vasilopoulos, 1995; Diekmann & Girard, 1995; Jones, 1994; Kumaraswamy, 1997; Mitkus & Mitkus, 2014).
- **Past Performance**; experiences of the past, whether related to situations in during the ongoing project or previous projects. What has happened in the past can lead to different approach to manage the conflict. If previous conflicts resulted in bad experiences of either party, their approach to a new conflict can be different than if they would have had a good experience. Furthermore, the history between both companies on different projects can influence the opinion of the project participants during new projects (Cheung et al., 2009; Diekmann & Girard, 1995).

2.5 Functional and Dysfunctional Conflicts

According to Cheung & Pang (2013) the occurrence of a conflict during a project in the build environment is unavoidable. However, this does not mean that conflicts cannot be prevented, nor that all conflicts have a negative impact (Chen et al., 2014; Loosemore, Nguyen, & Denis, 2000).

Liu & Zhai (2011) made a distinction between functional and dysfunctional conflicts. Dysfunctional conflict consists of emotional or interpersonal issues and is destructive to the relationship of the conflicting parties, while functional conflict consists of a disagreement related to the task issue and may promote understanding that leads to goal achievements. This is supported by Pel & Emaus (2007), who state that conflicts have both affective as cognitive aspects, and that when the affective aspect becomes larger it becomes difficult for the parties to approach the conflict rationally, and it becomes about more than the original issue.

Thus, the model of Acharya, Lee, & Im (2006) could be expanded by making a distinction between two different types of conflict. The functional conflict which can always occur, which is related to the task issue and may lead towards goal achievement. And the dysfunctional conflict, which is destructive and has a variety of factors and which is not restricted to just the task issue as other factors play a role as well.

2.6 Proposed Conflict Model

The hypothesized conflict model shows which factors play a part in the escalation of conflicts and what their underlying relation is. The model is based on the previously presented conflict continuum of Acharya, Lee, & Kim (2006), which can be adjusted based on the findings of the literature, as discussed in the previous paragraphs. The proposed model is presented in Figure 8.

The changes are focused on the process before a claim has been made, as there the conflict escalation takes place. Once a claim has been made, and is rejected, the topic is no longer about conflict escalation but about alternative dispute resolution.

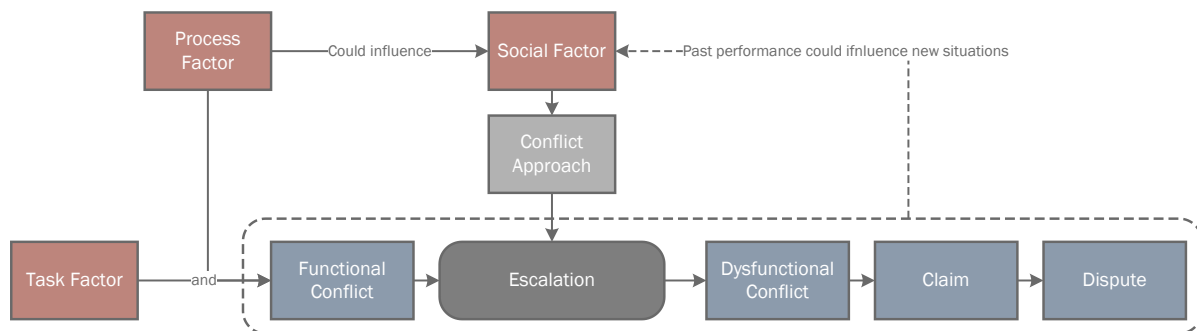


Figure 8: Proposed Conflict Model

Functional conflicts only arise as a combination of a task and process factor (Cheung & Pang, 2013; Mitkus & Mitkus, 2014). There will be a disagreement about the responsibility, or the solution of the occurred situation. The discussion is about the issue at hand and are constructive. Both parties try to reach a solution that may lead towards goal achievement.

The functional conflict may escalate to a dysfunctional conflict when the social factors influence the conflict approach of the involved parties. A dysfunctional conflict is not only about the issue at hand, also other factors need to be dealt with. The conflict is destructive and may further escalate towards a claim or dispute.

The social factors could be influenced by the process factors. The tension created by the contract, or during the tender phase could influence the interests or attitude of the involved parties. As the contract sets the conditions of the collaborations between the parties (Kamminga, 2009). The task factors on the other hand do not directly influence the escalation of a conflict, and the assumption is made that they also do not influence the social factors.

The past performance of previous conflicts, whether it was good or bad experiences, will influence the social factors. The past performance can either be from non-escalated functional conflicts or from the conflicts that escalated into a dispute. The past performance of projects in which both parties were involved is not part of this, as this is included in the social factors.

2.7 Conflict Management

In the section 2.4 several main categories of factors were identified which influence the escalation process of a functional to a dysfunctional conflict. It was assumed that the social factors directly influence the conflict approach of the parties. In this section, this will be further expanded upon by defining the approach of the parties and the factors influence this based on literature on conflict management. Furthermore, the role of contract management in conflict management, and the areas of attention for the field to prevent conflict escalation are discussed.

2.7.1 Conflict Management Model

Everyone has, based on their personality and experience, their own preference for a conflict management style. Over the years several conflict management models have been made, of which those distinguishing five different styles are the most used (Giebels & Euwena, 2006), therefore these models will be used in this research.

The concept of dual concern, was first conceptualized in the conflict management grid. There are two dimensions in the model, concern for self and for others, and concern for the relation with the other (Blake & Mouton, 1964). Thomas (1974) introduced based on the work of Blake & Mouton (1964) two new dimensions, cooperativeness and assertiveness to make a distinction between the different conflict management styles. Tsai & Chi (1995) on their turn, reframed the dimensions to concern for goals and concern for relationships. Rahim & Magner (1995) validated the five conflict management styles, adding to the previous work. While different dimensions are used to place the five different conflict management styles into that context, the work can be combined to form a comprehensive description of the five styles. In the following paragraphs the five styles will be described based upon their related dimensions, and expanded upon with the work of Giebels & Euwena (2006). In Table 3 the five different styles are given as described by the researchers. The terms of Giebels & Euwena (2006) will be used in this research, as there is no difference in meaning with the terms used by the other researchers.

Table 3: Conflict Management Styles

Giebels & Euwena (2006)	Rahim & Magner (1995)	Thomas (1974)	Tsai & Chi (1995)	Blake & Mouton (1964)
Avoiding	Avoiding	Avoiding	Avoiding	Indifferent
Conceding	Obliging	Accommodating	Accommodating	Accommodating
Imposing	Dominating	Competing	Dominating	Dictatorial
Compromising	Compromising	Compromising	Compromising	Status Quo
Problem Solving	Integrating	Collaborating	Collaborating	Sound/team style

In Figure 9: Conflict Management Styles, the different conflict management styles related to the dimensions used by the different researchers is shown. The figure is not on scale, as the compromising style is ranked lower on the assertiveness dimension than shown.

Imposing. High concern for yourself and own goals/interest. It is an assertive and uncooperative approach. Whatever power one seems appropriate to win is used, and there is a low concern for the relationship with the other party. On all kind of ways, the person with this style tries to achieve what they want. It is identified as creating a win-lose situation.

Conceding. The opposite of imposing, it is an unassertive and cooperative approach. There is a low concern for yourself and own goals/interest so that the concerns of the other party can be satisfied. An attempt is made to play down the differences and emphasize commonalities to satisfy the other party's concerns. It is associated with creating lose-win situations.

Avoiding. Unassertive and uncooperative with a low concern for both the own goals and relationship with the other party. Problems are put on hold and is sometimes associated with withdrawal, buck-passing, or sidestepping actions to reach a no-deal outcome. The confrontation is avoided, often because people think there is little to gain by dealing with the conflict. It is associated with creating lose-lose situation.

Problem Solving. The opposite of avoiding. It is both assertive and cooperative with a high concern for both personal goals and relationship. At the same time attention is paid to the needs, ideas, and interest of the other party. It is concerned with collaboration between parties (i.e., openness, exchange of information, and examination of differences) to reach a solution acceptable to both parties. Collaborating between two persons might take the form of exploring a disagreement to learn from each other's insights, concluding to resolve some condition which would otherwise have them competing for resources, or confronting and trying to find a creative solution to an interpersonal problem. It is associated with trying to create win-win situations.

Compromising. Intermediate in both assertiveness and cooperativeness with a concern for the relationship and the goals/interest of both parties. The aim is to find some expedient, mutually acceptable solution which partially satisfies both parties. It falls on a middle ground between competing and accommodating. Compromising gives up more than competing but less than accommodating. Likewise, it addresses an issue more directly than avoiding, but does not explore it in as much depth as collaborating. Compromising might mean splitting the difference, exchanging concessions, or seeking a quick middle-ground position.

Giebels & Euwena (2006) formulated several other criteria when a certain conflict management style could be chosen, which can be seen in Table 4. However, these criteria are not specific for the built environment, as other criteria, such as the long contractual relation might play a role.

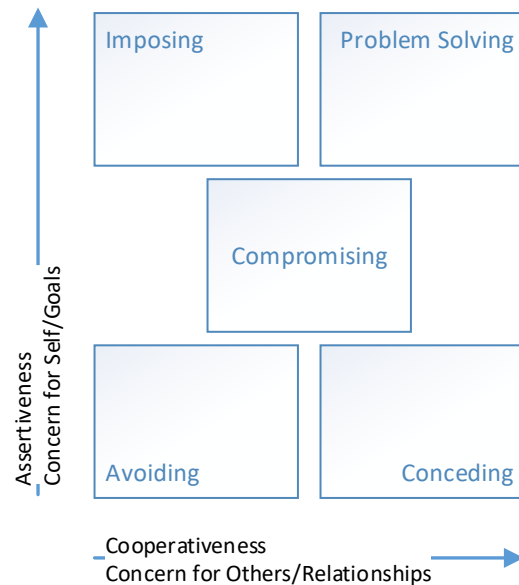


Figure 9: Conflict Management Styles

Table 4: Conflict management styles: applicable situation, requirements and risks (Giebels & Euwena, 2006)

Strategy	Applicable Situation	Requirements	Risk
Imposing	Important situation and <ul style="list-style-type: none"> • Other is uncooperative • Time pressure or crisis • Unpopular measure • Other is incompetent • Other is no relevant party 	Powerbase is available	Unnecessarily escalating tactics
Avoiding	Unimportant situation You cannot achieve your goal Delay is useful (waiting for better conditions) You want to maintain status quo A cool down is wanted Someone else can better solve it	To be able to take a step back	Misinterpretation by the other
Conceding	You will lose anyway The other is right The situation is less important for you than for the other and: <ul style="list-style-type: none"> • The relation with the other is important • You want to build credit You want to give the other room to expand/experiment	To be able to let go	Feelings of resentment/vengeance
Compromising	Important matter for both parties Limited resources	Willingness of both parties	Sharing things too easily: integrative potential not properly used
Problem Solving	Important matter for both parties Integration is important Realisation depends on motivation of both parties Important to learn	Time Energy Motivation Creativity	Abuse of good will and effort by other party

Considering the characteristics of the different conflict management styles, the following hypothesis can be formulated.

Hypothesis: The use of the imposing and avoiding conflict management styles will always lead to escalation, while the problem solving, conceding, and compromising styles will prevent the escalation of a conflict.

2.7.2 Interaction

The theory of cooperation and competition (Folger, Poole, & Stutman, 2004) describe conflict interaction in terms of two processes which maintain and strengthen themselves:

- **Cooperative interaction.** This interaction is characterised by an open dialogue and interest for each other, emphasising on the common interest and friendly atmosphere. Furthermore, people work together to find creative solutions. On this way, the interaction strengthens the collaboration that is already in place.
- **Competitive interaction.** In this type of interaction, the parties do not trust each other. There is no real friendliness, cards are held close to the chest, and the power differences are being used at the expense of the other. Communication is often limited and people are not sensitive for each other and common interest. This interaction easily results in escalation and strengthens the competitive climate that is already in place (Folger et al., 2004).

Furthermore, according to the interpersonal behaviour model, see Figure 10 the Rose of Leary (Leary, 1958), all behaviour including conflict behaviour can be described by means of two dimensions. The first dimension is dominance, ranging from dominance to submissiveness. The second is friendliness, ranging from friendly and cooperative behaviour to competitive behaviour.

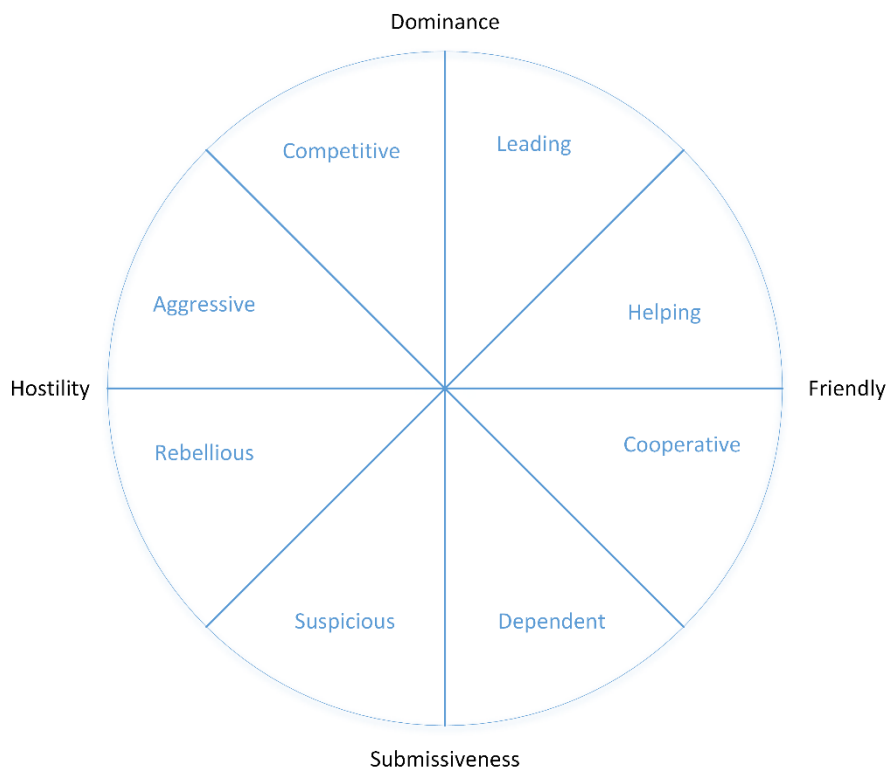


Figure 10: Rose of Leary

Leary (1958) states that people respond complementary on dominance, meaning that dominance results in submissiveness, and the other way around. While for the other dimension, friendliness evokes friendliness, and hostility results in hostility. However, it appears that in conflict situations, hostile dominant behaviour results in hostile dominant submissiveness, however, more often it results in equally hostile dominance (Nauta, 1996).

As during a conflict situation there are always more than one party, the response of the other party on the chosen approach needs to be considered. The research is about preventing escalation of conflicts, and according to Folger et al. (2004) this requires a cooperative attitude. This is supported by Leary (1958) as hostility of one party results in hostility of the other, thus to prevent escalation a friendly cooperative approach is required.

Of the five conflict management styles mentioned before, the imposing and avoiding style are characterised as uncooperative. While the conceding, compromising and problem styles are cooperative of nature. The conceding style has in the context of projects another added downside, as it might set a precedent for further situations. The other party could argue during future situations that as you conceded in a similar situation, you should concede again.

Resolving a conflict does not limit itself to the use of one single style per conflict, often a combination of styles is used to effectively come to a solution (Giebels & Euwena, 2006). It is effective when you first impose and then problem solve (Van de Vliert, Nauta, Euwema, & Janssen, 1997). However, this still means that the conditions need to be there to be able to use a cooperative conflict management style to be able to solve the conflict without escalation.

2.7.3 Choice of Approach

The reasoning behind the choice of conflict approach of the involved parties will need to be discussed before the interventions can be given. A distinction can be made between a personal and a strategic conflict management style (which can be one of the five previously mentioned styles). The personal style depends on aspect of the personality, like social values, friendliness, social skills, and personal development. The strategic choice depends on the goals, context, relation with the other party, and so forth. The personal style of conflict management influences the strategic choices and thereby the actual conflict approach. The risk is that the strategic choice for a style is influenced unknowingly by the personal style (Giebels & Euwena, 2006).



Figure 11: Choice of Conflict Approach

In Figure 11, the different social factors (section 2.4.4) and the factors that influence the cooperative interaction (section 2.4.4) are related to the personal and strategic choices for conflict management style. The explanation of what the factors mean is given in Table 5.

Table 5: Conflict Approach Factors

Main Factors	Factors
Personal Interest	Role and career interest of the individual.
Competences	Interpersonal skills, background, and experience.
Attitude & Behaviour	Personality, personal events
Atmosphere	(Competitive) Culture, (un)friendliness.
Stakeholder Interest	The interests of the different stakeholders.
Project Interest	The interests of the project (schedule, budget, etc).
Relationship	The relation with the other party.
Context	Responsibility for the cause, economic situation, past performance of project and conflict, procedures and other contract documents and terms.

The factors will need to be influence on such a way, that parties are willing to choose for an approach that will not lead to escalation of the conflict. In paragraph 2.7.2 it can be concluded that the approach of one party, will influence the approach of the other, and that cooperative interaction is required to handle issues. This leads to the hypothesis:

Hypothesis: To prevent conflict escalation, the conditions should be created so that parties are willing to approach a conflict by means of cooperative interaction, resulting in the use of a non-escalating conflict management style.

2.8 Conclusions Literature: Conflict Escalation

In this chapter, a new conflict model has been proposed, which separates three main categories of conflict factors, namely task, process and social. The escalation, from a functional to a dysfunction conflict is determined by the social factors, which influence the conflict approach the parties take in a conflict situation, and therefore whether the conflict will escalate or not. The conflict approach depends on the personal preference of the involved individuals, and the strategic choice made.

The approach will result in the use of a conflict management style, for which this hypothesis was formulated: *The use of the imposing and avoiding conflict management styles will always lead to escalation, while the problem solving, conceding, and compromising styles will prevent the escalation of a conflict.*

Considering what approach needs to be taken by both parties so that a non-escalating conflict management style is chosen led to the hypothesis: *To prevent conflict escalation, the conditions should be created so that parties are willing to approach a conflict by means of cooperative interaction, resulting in the use of a non-escalating conflict management style.*

Eight main factors that make up the social factor category were formulated (Table 6). These factors influence the personal preference for a conflict management style, which could influence the strategic choice for a conflict management style. For these the interventions will need to be found so that the conditions required for cooperative interaction can be created, resulting a choice for a non-escalating conflict management style.

Table 6: Main Social Factors

Personal interest	Stakeholder interest
Competences	Project interest
Attitude & behaviour	Relationship
Atmosphere	Context

In the next stage of the research by means of empirical data, the model, hypothesis, and factors need to be tested and expanded upon.

3

Conflict Escalation According Practice

In this chapter, the results of the interviews on the topic of conflict escalation are discussed in relation to the literature presented in the previous chapter. Section 3.1 will briefly discuss the source of the practical data. Section 3.2 will describe the different types of escalation were found and section 3.3 will discuss the hypotheses. In Section 3.4 the underlying assumptions of the conflict model will be examined while in section 3.5 the adjusted model will be described. This will provide the answer on the sub-questions related to the conflict escalation processes, the factors that influence escalation process and which conflict management style should be used. These topics will be brought together in the conflict model formulated in the previous chapter which will be adjusted based on the results.

3.1 Interviews

To validate the conflict model made in 2.6 Proposed Conflict Model, and thereby identify and expand on the factors that influence the choice for conflict approach and thereby the escalation process (sections 2.4 & 2.7.3), interviews were held with several professionals. In Appendix D: Interview Protocol Conflict the protocol for these interviews, can be found. Furthermore, in subsequent interviews during the case studies, about potential interventions and the field of contract management comments related to conflict escalation were made. The results related to conflict escalation can be found in Appendix G: Results Interviews Conflict Escalation.

3.2 Several Types of Escalation

During the interviews, it was indicated that a distinction should be made between interests and psychological factors. Furthermore, that interests first play a role, before the psychological factors (human aspects) come into play. While in the literature study (section 2.6) no distinction was made between different escalation processes related to different types of conflicts, this is the case in practice.

In section 2.1, five different types of conflicts are described, which can be placed into context based on the interview results, and section 2.6. It starts with an operational conflict about the execution of the work and these arise when no good agreements have been made. In the interviews, this was referred to as a disagreement, and as functional conflict in section 2.5. It was stated that it is not a problem to have a disagreement, if it does not escalate. In the proposed conflict model this type of conflict was hypothesized to be caused by a combination of project and process factors, which was supported by the interviewees. This type of conflict will further be referred to as a disagreement, since it matches the perception of the interviewees.

In section 2.4.4, different social factors are given that influence the escalation process. Based on the interviews it can be concluded that a distinction should be made between the different factors, as they require different intervention (approaches). A disagreement can either escalate towards a conflict of interest (section 2.1), or a dysfunctional conflict (section 2.5), compromising of a views and values, identify or metaconflict (section 2.1).

This leads to a redefinition of the escalation processes (see Figure 12) and the definitions for the terms used further in this research. In the figure, it shows that a disagreement can escalate towards an interest conflict (driven by divergent interest) or a dysfunctional conflict (driven by a combination of interests and human aspects). A dysfunctional conflict can deescalate towards an interest conflict, and the other way around an interest conflict can escalate towards a dysfunctional conflict. Both conflicts can eventually escalate towards a claim, and later a dispute (section 2.6).

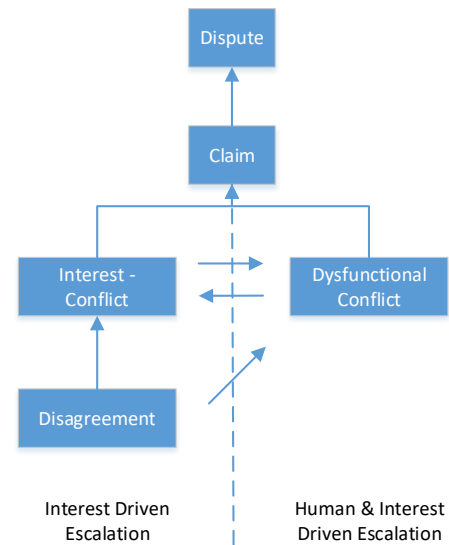


Figure 12: Escalation Process

In the research, the following definitions will be used, based on the literature and interview results:

- **Disagreement:** caused by a combination of project and process factors, the parties do not agree about who is responsible, and/or the solution for the occurred cause. This discussion is purely about the content/problem.
- **Interest conflict:** extension of a disagreement caused by the divergent interests of the parties, and need to be overcome before the disagreement can be solved.
- **Dysfunctional conflict:** extension of a functional conflict, here the human aspects (psychological factors) in addition to the divergent interests and the content play a part. The psychological factors need to be overcome before the interests can be discussed, as the psychological factors can increase the perception of the interest differences.

When considering the problem definition (section 1.1) the long term negative effects on the relationship between the parties were given as a problem. This could be related to the dysfunctional conflicts, as it was stated by several interviewees that disagreements/conflicts are not necessarily something that should be avoided at all times. They can contribute to the project success as issues are resolved. This can indicate that it is about how disagreement are handled, rather than just prevent all escalation to prevent the negative effects of conflicts. In the research part about the interventions this shall be discussed further.

3.3 Conflict Approach

The identified factors in section 3.4.2 influence the conflict approach of both parties. In section 2.7 the model with five different conflict management styles was described. In the interviews, it was questioned which of these styles would lead to escalation to either reject or accept the hypothesis *“The use of the imposing and avoiding conflict management styles will always lead to escalation, while the problem solving, conceding, and compromising styles will prevent the escalation of a conflict.”*

In agreement with the literature, the interviewees stated that the problem solving, compromising, and conceding styles would not lead to escalation, while the imposing style will always lead to escalation. The avoiding style, where the issue is ignored is according most interviewees leading towards escalation in the sense that the problem becomes bigger and that it is still in the back of people’s mind that there is that issue that is ignored. One interview stated that it is sometimes good to ignore an issue as it could resolve itself, however, as the other interviewees disagreed, the avoiding style is counted amongst those that lead towards escalation.

However, in practice it is not as black and white as this, as explained when considering the hypothesis: *“ To prevent conflict escalation, the conditions should be created so that parties are willing to approach a conflict by means of cooperative interaction, resulting in the use of a non-escalating conflict management style.”*

While cooperative interaction as hypothesized (section 2.7.2) would result in the choice for a non-escalating conflict management style, the choice can still be made for an escalating style. Cooperative interaction has to do with the fact that there will not be a dysfunctional conflict, however, there can still be a conflict driven by divergent interests (section 3.2). If the interests of the parties are too significant, it can prevent finding a solution for the cause of the disagreement, resulting in a choice for the imposing conflict management style, despite having cooperative interaction. The disagreement will escalate, only if it happens during cooperative interaction, the effects on the relation will be minimised. This also supports the notion that there are different types of escalation.

3.4 Conflict Model

There are different mechanisms and escalations that can take place after a disagreement occurs. The model proposed in 2.6 will need to be adjusted based on the finding in the interviews, and the findings earlier in this chapter. First the assumptions used to create the model will be discussed, then the different factors that influence this process and lastly the new model will be presented.

3.4.1 Underlying Assumptions Model

In the interviews, the different assumptions were tested, and based on the feedback received during the interviews several changes will need to be made.

As discussed before, disagreements (functional conflicts) arise as a combination of project and process factors. This disagreement can escalate depending on the conflict approach of both parties, in the previous section it was concluded that there are different types of escalation, rather than one. This approach is influenced by the social factors, which can be separated on the personal level (interaction between individuals), and the strategic choice of both parties (section 2.7.3, supported by the interviewees).

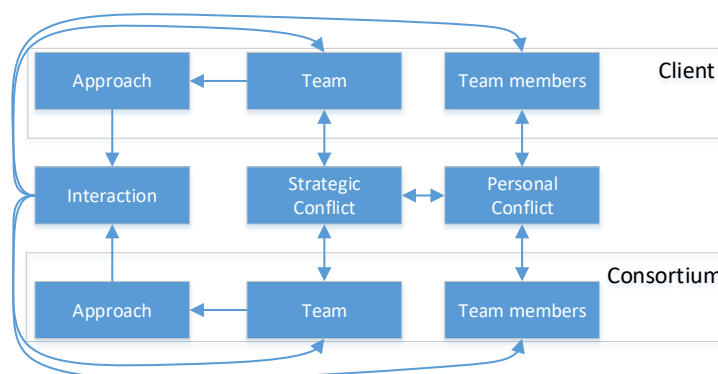


Figure 13: Team(member) Conflicts

In Figure 13, it shows that there can be conflicts between team members of both parties, and strategic conflicts between the different teams. The personal conflicts can influence the strategic conflicts (and the other way around), which influence how both teams approach the disagreement/conflict, the resulting interaction between the parties on its turn, influences the team(member). This can create a vicious circle, leading to further escalation.

When considering the process factors, these have both a direct and indirect influence on the conflict approach of the parties, rather than just an indirect influence. The procedures directly influence how parties handle the situation (conflict management/communication procedure), while they also set the

context in which atmosphere/relation the parties act. Furthermore, the terms have an impact on the different interests of those involved.

The project factors rather than assumed, relate to the interest of the parties. The impact of the solution, and which party is considered to be responsible for the cause of the disagreement influence how parties handle the disagreement/conflict.

As assumed, the past performance (experience) during the conflict influences the way parties act. In section 2.7.2, it was stated that the behaviour of one party, determines the behaviour of the other. This is related to the past performance during the disagreement/conflict, and was backed by the interviewees.

3.4.2 Conflict Escalation Factors

The factors found in the literature (sections 2.4 and 2.7.3) were tested in the interviews if they do have an influence of the parties. During each interview, the interviewee was asked what influences the escalation process (or what makes a disagreement escalate), and this was cross referenced with the factors found in the literature. The factors that were not mentioned by the interviewees were questioned, as they might have been forgotten or there could be another reason why they were not mentioned. The factors that were mentioned, yet were not found during the literature study were added to the list of factors. In interviews with other people, these factors were questioned the same way as the literature factors were. In Appendix G: Results Interviews Conflict Escalation the summary of the results of the interviews are given.

It was found that many of the factors found in the literature study were mentioned by the interviewees, while the “new” factors were supported by other interviewees. During the last couple of interviewees, no new factors were mentioned, and it could be concluded that sufficient saturation was reached.

The list of resulting factors was then sorted, as there was overlap between the mentioned factors and sometimes the interviewees meant the same, yet described it differently. The escalation factors are mainly based on the social factors that were defined in the previous chapter, and include certain aspects of the project factors (impact and responsibility) and process factors (contract documents and procedures). The factors that were related were grouped together in main factors and some of the factors found in the literature were redefined based on the interview results.

This led to a list of 11 main factors with 28 related sub-factors. These factors influence the escalation from a disagreement to a conflict, and are not related to the arising of a disagreement, which is outside the scope of this research. The factors be positive (contributing to preventing escalation) as negative (contributing to escalation). If a disagreement escalates or not, will always be caused by a combination of these factors, where some might work positively while others negatively.

In Figure 14, the resulting framework, and sources of the factors are shown. The green factors are literature based and supported by the interviewees, the blue ones follow only from the interviews and the grey ones result from the literature yet were adjusted based on the made comments. Lastly, the orange main factors were formulated based on the insight of the researcher gained during the interviews. This was done based on the insight of the researcher gained during the interviews and literature study.

In Table 7: Conflict Escalation Factors, short descriptions of the factors found in the framework are given. These factors will need to be validated in a later stage of the research, as they are partly based on the insight of the researcher.

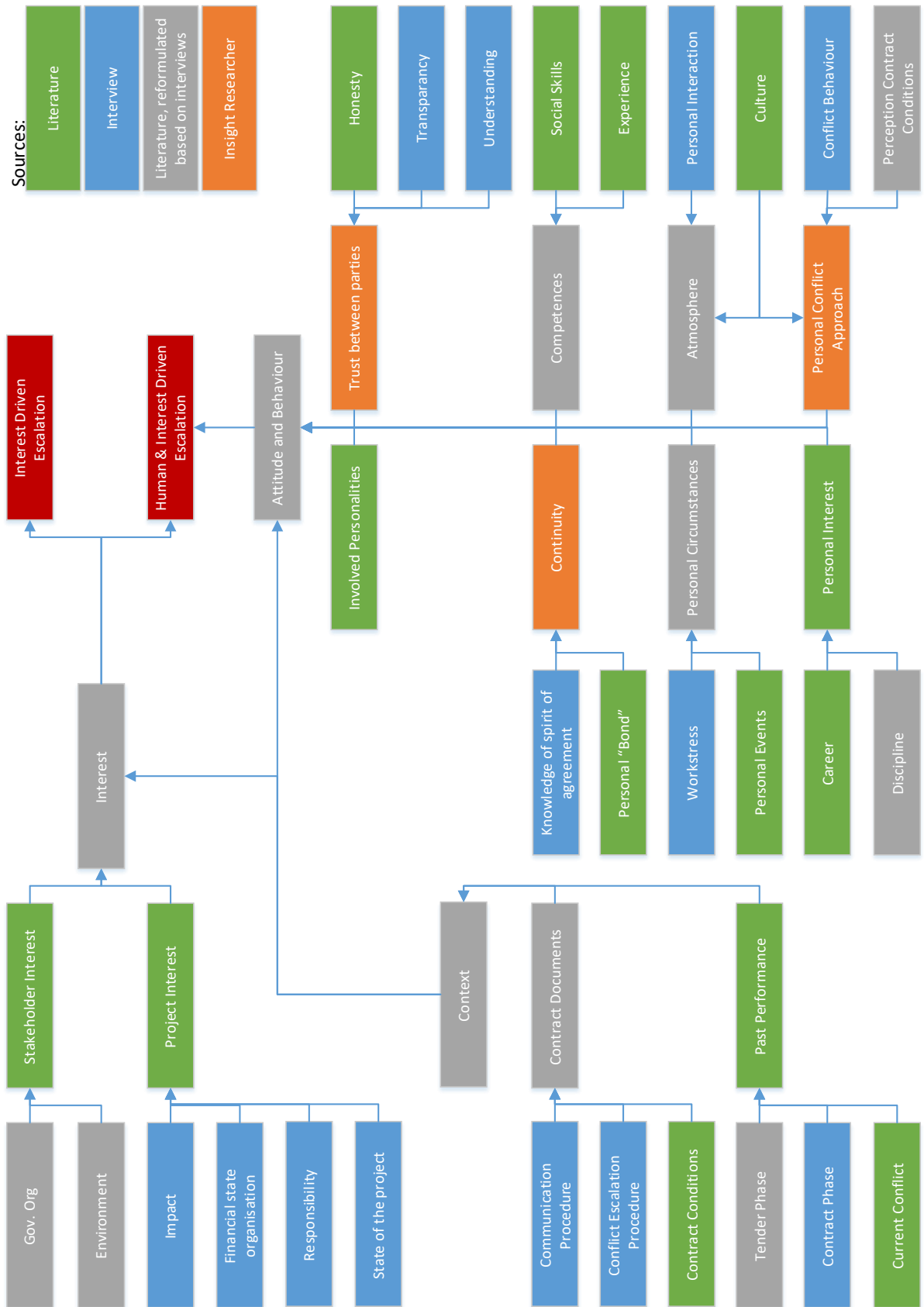


Figure 14: Escalation Factor Framework

Table 7: Conflict Escalation Factors

Category	Factor	Sub-Factor	Description
Attitude & Behaviour	Personal Interest	Discipline	Discipline related interests which might prevail above project interests.
		Career	Career related interests which might prevail above project interest.
	Competencies	Experience	Work and conflict experience.
		Social Skills	Amongst others, communicative skills.
	Personal Circumstances	Personal Events	Events in the personal life of the individual.
		Work stress	The amount of work stress and how the individual handles it.
	Personality	Involved Personalities	The measure on how the different personalities of those involved can get along.
	Atmosphere	Culture	The project culture, competitive, cooperative, etc.
		Personal Interaction	The measure of “friendliness” in the interaction between the individuals.
	Personal Conflict Approach	Perception Contract Conditions	On which way the contract conditions are interpreted, literal or in the spirit of the contract.
		Conflict Behaviour	The individual does not mind or he prefers to avoid conflicts.
	Trust	Honesty	The feeling about the honesty of the actions of the other.
		Openness/Transparency	The measure of openness regarding the sharing of information.
		Understanding	If the parties understand the (reasoning behind) decisions of the other party.
Continuity	Personal Connection	The influence of team changes on the knowing your counterpart.	
	Spirit of the Agreement	The influence of team changes on the measure of how much can be acted based on the spirit of the agreement. (collective memory)	
Interests	Project Interests	Impact Disagreement	The cost of the proposed solution for the disagreement.

		Responsibility	Which party is perceived to be responsible for the cause of the disagreement.
		Organisation	Financial State of the organisation.
		State of the Project	If the project is within schedule/budget.
	Stakeholder Interests	Involved Governmental Organisations	The interests and goals of the involved governmental organisations (users/clients)
		Environment stakeholders	The interests and goals of the stakeholders in the environment of the project.
Context	Past performance	Tender	Influence of the Tender Phase.
		Conflict	Influence of what has happened during the disagreement on further actions.
		Contract Phase	Influence of what has already transpired during the contract phase on the current conflict.
	Contract Documents and Procedures	Communication Procedure	The quality of the communication procedures.
		Conflict Escalation Procedure	Presences and quality of a conflict escalation procedure.
		Contract Conditions	Perceived fairness of the contract conditions.

3.5 Intermediate Conclusions: Conflict Escalation

In Figure 16, the elements related to conflict escalation are presented in the adjusted conflict model, and the conclusions will be explained based upon this model.

Disagreements are caused by a combination of project and process factors and these disagreements can escalate towards a conflict based on the conflict management style the parties choose. The hypothesis which conflict management style will not lead to escalation was partly accepted. While the imposing style leads to conflict escalation, and the compromising, conceding and problem solving do not, it depends on the style used by the other party as well. Only when both parties choose for a non-avoiding and cooperative style the escalation will be prevented. The avoiding style should be avoided as the potential cause for the conflict can worsen without parties being aware of it, furthermore it can (unknowingly) influence the decision making of parties in other situations.

The choice for the conflict management style depends on the interaction between the parties. The hypothesis that cooperative interaction should be created so that parties choose for a non-escalating conflict management style was partly accepted. While in principle this interaction results in the choice for a non-escalating style, the divergent interests of the parties can be that significant that a disagreement will escalate nonetheless.

The choice for cooperative interaction, and the conflict management style depends on the strategic choice of both parties, and the attitude and behaviour of those involved. The attitude and behaviour can (un)knowingly influence the strategic choice the parties make.

This leads to two types of escalation, namely interest driven and human & interest driven. The human & interest driven escalation will continue to escalate till the human aspects have been dealt with and it becomes solely an interest driven escalation. The situation can then be deescalated, or it will continue to escalate due to the significance of the divergent interest. However, due to having cooperative interaction between the parties the negative effects of this escalation will be reduced.

Three types of conflicts were formulated, namely the interest, attitude and behavioural, and dysfunctional conflicts related to the identified escalating factors, which are given in the model. The main factors consist of 28 sub factors as identified in this chapter.

The interest conflicts are caused by divergence of interests between the client, contractor and involved stakeholders. Influenced by the impact and responsibility of the cause of the disagreement, the past performance during the contract phase and current disagreement and the contract terms and procedures. Interest conflicts are caused by a divergence of interests between the client, contractor and involved stakeholders. Influenced by the impact and responsibility of the cause of the disagreement, the past performance during the contract phase and current disagreement and the contract terms and procedures.

Attitude and behavioural conflicts are caused by the attitude and behaviour of those involved, which is influenced by the human aspects together with the contract terms and procedures and the past performance.

Dysfunctional conflicts take place when both the attitude and behavioural, and interest conflicts occur. To solve this conflict, first the human aspect needs to be handled, before the interests and actual content of the issue can be dealt with.

This is illustrated by Figure 15, which shows how a problem can become larger due to the human aspects and interests of those involved.

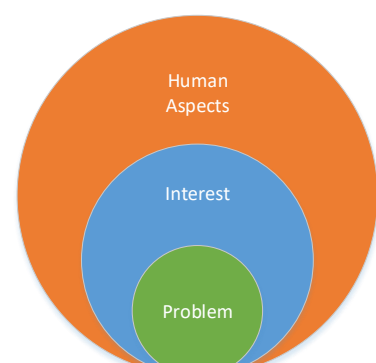


Figure 15: Conflict Makeup

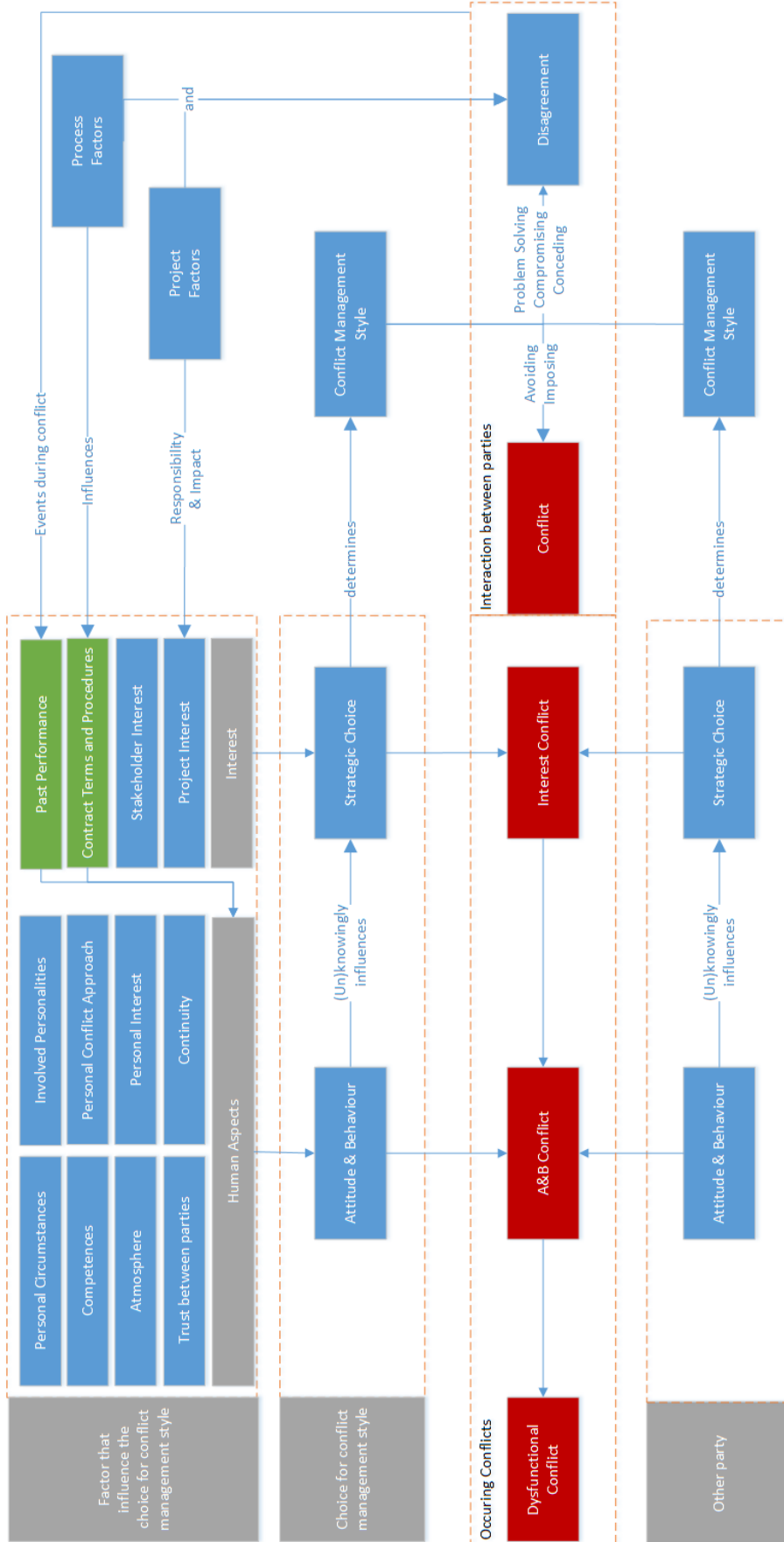


Figure 16: Conflict Escalation Model

Contract Management According Literature

The field of contract management is being used in different sectors, including the construction sector. In this sector, the field is often applied during projects with an integrated contract, although there are differences among the companies as to how and whom is involved. Therefore, the area of influence of contract management will be determined based on (international) literature and company documents of client(s). This will allow to reach a conclusion later as to which interventions fall within the area of influence of contract management.

Section 4.1 discusses the characteristics of integrated contracts. Section 4.2 presents the goal of contract management, while section 4.3 describes the tasks related to the field. Section 4.4 describes the relation between contract management and other roles/fields and section 4.5 the found interventions related to the field. In section 4.6 the conclusion and the preliminary answer on the sub-question about the area of influence of contract management is given.

4.1 Integrated Contracts

The UAV-GC (innovative/integrated) contract is characterised by the aggregation of tasks and responsibilities of the construction process at one single contracted party. The client can determine per project what the division of responsibilities is between the client and contractor in the design, build and maintenance phases (Pianoo, n.d.-b; Projectburo B.V., n.d.).

The difference with the UAV 2012 (traditional) is the shift of responsibility for the design(decisions) from the client to the contractor. For a traditional contract, the client drafts the implementation design, for example using the RAW-systematic. While with an integrated contract form, the client can choose between three variants, whereby the client at the least drafts a program of requirements with functional specification. This can be supplemented by either a preliminary or even a final design.

Furthermore, in the UAV-GC 2005 it is possible that the obligation for obtaining the necessarily is shifted to the client, and that the risks can be shared on an optimal way between the client and contractor. The basic principle is that the party who is best able to carry or manage the risk should become responsible for it. Another difference is the involvement of the client during the project. (Projectburo B.V., n.d.).

For integrated contracts, namely the UAV-GC and DBFMO, there is limited review authority of the client, and there is a reversed burden of proof (contracting party has to prove) compared to UAV contracts. Where the client for a UAV contract has the initiative, and carries the responsibility for the progress and quality of the work, there is a change of those responsibilities in integrated contracts (Projectburo B.V., n.d.; Rijksvastgoedbedrijf, 2016).

For the integrated projects the Design & Build is the most used organisation method, with the UAV-GC been specifically designed for it. The UAV-GC is always used by the Dutch government organisation for integrated projects. For the organisation methods DBFM or DBFMO these standardised legal-administrative conditions are not applicable (Pianoo, n.d.-b).

The Design, Build, Finance, Maintain, (&Operate), in short DBFM(O) is an integrated contract form, whereby the contractor is responsible for the financing, design and construction of the object, and is also responsible for the maintenance. In case the contractor is also responsible for the exploitation of the object than the O is also included.

In a Design & Build contract the client buys a product, for example a road with 2x2 lanes. In a DBFM-contract the client buys a service, for example an available road. The contractor (consortium) takes within the set conditions the responsibility for the complete project. Depending on the contract, after the design, construction and financing the consortium is still 20 to 30 years responsible for the maintenance. The reimbursement is than per month or quarter, and the contractor is paid on the actual availability of the road (Pianoo, n.d.-a).

4.2 Goal of Contract Management

Several goals for the field of contract management can be found in the literature related to the service and construction sector:

- [Rietveld \(2015\)](#). Contract management serves to maintain the value of the contract. It is part of the process of procurement (finding the value), implementation of the contract (getting what is agreed) and supplier development (improving what you already have).
- [Knoester \(2005\)](#). Contract management should manage the administration of all obligations and agreements as laid down by the contract with the aim of avoiding risks, monitor, and reduce costs, and contribute to the strategic policy on outsourcing.
- [Bos \(2014\)](#). Contract management serves to ensure that all parties involved in the agreement meet their obligations, so that the operational targets of the contract and organisation are met.
- [OGC \(2002\)](#). The central aim of contract management is to obtain the services as agreed in the contract and achieve value for money. Contract management may also involve aiming for continuous improvement in performance over the life of the contract.
- [Department of Housing and Public Works \(2016\)](#). Contract management serves to successfully deliver the goods/services at the agreed level and costs, to the agreed timeframe, with minimal risks.
- [McPhee \(2012\)](#). The aim of contract management is to ensure that all parties meet their obligations. It includes managing the contractual relationships and ensuring that deliverables are provided to the required standard, within the agreed timeframe and achieve value for money.
- [Elsey \(2007\)](#). The contract (life cycle) management is the process of systematically and efficiently managing contract creation, execution and analysis for maximising operational and financial performance and minimising risk.
- [Hetteema & Keuvelaar \(2015\)](#). System Oriented Contract Management serves to reach the required quality for the contracted activities.
- [Rijkswaterstaat \(n.d.\)](#). Contract management serves to manage the risks that arise between the market and the client.

All the goals have in common that contract management serves to ensure that all parties in the contract meet their obligations within the contract scope. Furthermore, OGC (2002) and Rietveld (2015) state that contract management should also achieve value for money, or try to improve on what you have agreed on (McPhee, 2012; Rietveld, 2015).

As result of successful contract management, the contract will be without disputes, where value for money is maximised, and there is a good relation between the parties (Department of Housing and Public Works, 2016; Elsey, 2007).

4.3 Contract Management Tasks

Three different phases, namely pre-contract, contract phase and contract closure, can be distinguished for contract management. For each of those phases the responsibilities assigned to contract management will be described.

4.3.1 Pre-Contract Phase

Contract Management starts before the contract has been awarded, although not all sources pay much attention to this phase. The importance of starting early is stated by Elsey (2007), according to whom for successful contract management, it is most effective if upstream or pre-award activities are properly carried out. Furthermore, McPhee (2012) states that the contract development phase is critical to achieving the outcomes sought by the acquiring entity. It also lays the foundation for the effective management of the contract.

Contract management starts with the market orientation and consultation (Heeren, 2010; Knoester, 2005) and determining the procurement need (Elsey, 2007; Heeren, 2010; Hettema & Keuvelaar, 2015; Knoester, 2005). Furthermore, contract management is involved in creating the procurement plan, strategy determining the contract form and has the oversight on the drafting of the contract documents, based on procurement advise, legal testing and consideration of the different interests (Heeren, 2010; Hettema & Keuvelaar, 2015; Knoester, 2005; McPhee, 2012; OGC, 2002). Moreover, guiding the actual contracting (with the associated tender and contract document) and award fall within its' responsibility (Heeren, 2010; Hettema & Keuvelaar, 2015; Knoester, 2005).

Furthermore, the creation of a contract management plan is needed. This includes the risks to the success of the contract, summary of contract details, roles and responsibilities of personnel in the acquiring entity and supplier, contract terms and conditions, communication and reporting schedules, performance indicators and measures, pricing and payment conditions, and risk assessments (Elsey, 2007; McPhee, 2012). In the Dutch context this also includes setting up the system orientated contract management system (Heeren, 2010; Hettema & Keuvelaar, 2015), which will be more explained in the Performance Management part of the next section.

4.3.2 Contract Phase

The contract phase starts after the contract has been awarded, and five different main responsibilities can be distinguished. In Figure 17 these are shown including the important tasks that are part of those responsibilities. In the following paragraphs these will be further elaborated.

Contract Administration	Change Management	Performance Management/SCB	Relation Management	Conflict Management	Risk Management
<ul style="list-style-type: none"> • Schedule Meeting • Payment • Formal Document System • Change Control • Acceptance of Work 	<ul style="list-style-type: none"> • Negotiate Changes 	<ul style="list-style-type: none"> • Monitor • Assess • Determine consequences 	<ul style="list-style-type: none"> • Performance negotiations • Manage relation with contracting party 	<ul style="list-style-type: none"> • Protect Interest of Client Organisation 	<ul style="list-style-type: none"> • Identify • Treat

Figure 17: Contract Phase Responsibilities

Contract administration

Contract administration is concerned with the practical matters of the relationship between the client and consortium, and the operation of the routine administrative functions. It is an integral element of contract management and it overlaps with the monitoring and performance assessment (Elsey, 2007; McPhee, 2012; OGC, 2002).

It includes several activities, like scheduling meetings and other actions required by the contract, acceptance of work, making payments, maintaining complete records for the contract itself, and establishing and maintaining the contract documentation. The contract documentation itself must continue to accurately reflect the arrangement, and changes to it (required by changes to services or procedures) Furthermore, setting up and maintaining a formal document system to keep track of all contract documents, changes and procedures (Department of Housing and Public Works, 2016; Elsey, 2007; McPhee, 2012; OGC, 2002) .

Change Management

Contract management is also involved in the changes to the contract. A change is an amendment to a contract that changes the original terms or conditions and are almost inevitable during the period of a contract. They should be considered as opportunities to improve the contract output. However, it is important to understand the implication of the change on the agreement as it can affect the scope or value of contract. The changes require negotiation with the other party, and should be carefully registered. It should be done in line with the set-out procedures. The outcome of the change should be agreed upon before giving instruction to make the change (Elsey, 2007; McPhee, 2012; OGC, 2002).

Performance Management

Performance management is another element that is part of the field of contract management (Elsey, 2007; House of Commons, 2009; Knoester, 2005; McPhee, 2012; OGC, 2002; Rietveld, 2015). It assesses if the required work is delivered, and the quality of said work. It serves to get the expected value from the contract and ensure ongoing contract compliance and to stay within budget (Department of Housing and Public Works, 2016).

Performance management is an ongoing activity that involves the performance monitoring (collecting data on performance), performance assessment (if the performance meets the standards) and taking appropriate action. To do so proper key performance indicators should be established (Department of Housing and Public Works, 2016; McPhee, 2012). These should be established in the sourcing step, before the contract is signed (Department of Housing and Public Works, 2016).

If appropriate action needs to be taken based on underperformance, there are several actions that can be taken depending on the seriousness, namely, withholding payments, involving senior management from both parties, develop strategies to address the problem and formally document them and track them or implementing other formal mechanisms included in the contract. (McPhee, 2012). The contract manager is responsible to initiate the discussions about the underperformance (Department of Housing and Public Works, 2016).

In the contract provisions are included for the performance monitoring, this includes the responsibility for collecting and analysing the data, deciding how often the monitoring should take place and reviewing the arrangements. Not all aspects are normally covered in the contract, a part of them are developed in the contract management plan. The contract manager will need to decide if additional steps are required for the monitoring outside the contract (Department of Housing and Public Works, 2016; McPhee, 2012).

The public clients in the Netherlands use the method of system oriented contract management (SCB) as a way of performance management. Which shall be described further in the next section.

System Oriented Contract Management

Systeemgerichte contractbeheersing (SCB) is used by the Rijksvastbedrijf, Rijkswaterstaat and other public clients as a method for contract management that is applicable for different integrated contract forms (Heeren, 2010; Rijksvastgoedbedrijf, 2016). In the integrated contracts, namely the UAV-GC and DBFMO, there is limited test authority of the client and a reversed burden of proof (contracting party has to prove) compared to traditional contracts. Where the client with UAV has the initiative and carries the responsibility for the progress and quality of the work, this is reversed for integrated contracts (Hetteema & Keuvelaar, 2015).

Therefore, SCB is used, which is a risk based method that focusses on the quality assurance system of the contractor and the underlying processes. The aim is to reach to required quality for the contracted activities. To reach the quality, the focus is on reaching the project goals from the start. Furthermore, the process and risks, of both the client and contractor, that have an influence on those goals are being managed (Hetteema & Keuvelaar, 2015).

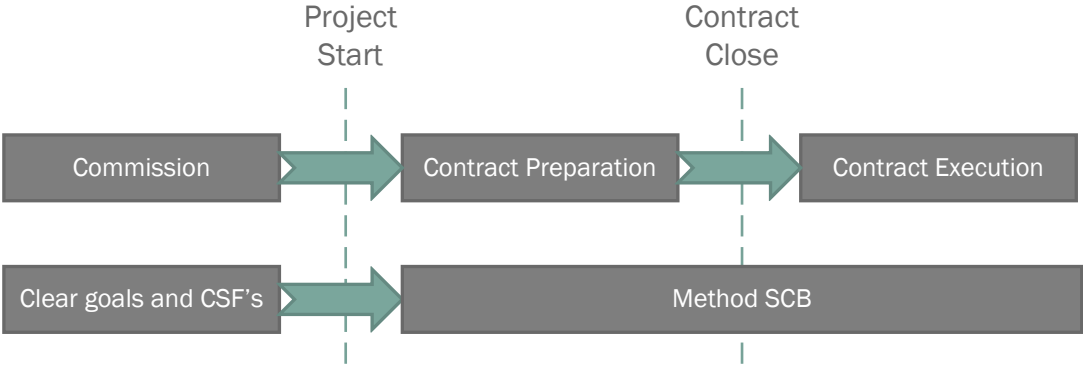


Figure 18: SCB in Contract Phases (Hetteema & Keuvelaar, 2015)

The difference with the traditional method of contract management is how and when the quality of the work is controlled. Rather than with the traditional method where the quality of the work is checked after completion of the project. SCB requires that beforehand and is directed on the goals, processes, and required quality. With this its prevented that there is dissatisfaction after project completion. The contracting party is accountable for the responsibility, and liabilities of the delivered quality (Hetteema & Keuvelaar, 2015).

The quality of the product will not only be tested at completion of the project to see if it meets the requirements. When there is for example damage to the painting, the contracting party not only has to solve that instance, but also show how further problems of this kind will be prevented. The client judges the functioning of the quality assurance system of the contracting party. Because of this, it also becomes in the interest of the contracting party to deliver the right quality (Hetteema & Keuvelaar, 2015).

Relationship Management

Contract management/manager maintains the daily contracts with the market (Heeren, 2010; Hetteema & Keuvelaar, 2015), and is responsible for developing the relation between the parties (Department of Housing and Public Works, 2016; Knoester, 2005; OGC, 2002). Contract management is responsible for both the relation with the stakeholders, as with the contracting party (Department of Housing and Public Works, 2016; Elsey, 2007; McPhee, 2012; OGC, 2002). It is important that the stakeholders are briefed on the progress and outcomes. This will allow to gain input from the stakeholders, and managed their expectations (McPhee, 2012).

Relationship management is critical to the success of good contract management (Eley, 2007; McPhee, 2012). And according to McPhee (2012), (Eley, 2007) and (OGC, 2002), the aim of relationship management is to keep the communications between the parties open and constructive, non-adversarial and based on mutual understanding. It is a key ingredient to successful delivery of the sought outcomes of the contract, and it should be started with at the initial stages of the project.

In long term contracts, the interdependency between the parties is inevitable, and it is in their interest to make the relationship work. There are three factors for success, namely, trust, communication, and recognition of mutual aims (Eley, 2007; OGC, 2002). Maintaining a good relation does not mean that issues of underperformance/non-compliance cannot be discussed or acted upon (McPhee, 2012).

Furthermore, when required the contract manager does the negotiation with the market. It depends on his mandate if either advises, or has the mandate to make decisions himself (Heeren, 2010; Hetteema & Keuvelaar, 2015).

Risk Management

Risk management is an important step of managing the value of the obtained service. The risks, that can endanger the fulfilment of the contract, can both be in the clients' own responsibility, or in that of the contracting party (OGC, 2002). It should be an integral part of all aspects of procurement, including the development and management of the contract (McPhee, 2012). The risks need to be identified, treatments be effected through contract provisions and through active management of the contract. It is important to consider the amount of risk allocated to each party, which should be placed by the party who is best able to manage them (McPhee, 2012; OGC, 2002).

Conflict/Dispute Management

Even though the understanding by both parties of their contractual responsibilities and professional relationship management reduce the potential of disagreements and conflicts, there is still a chance for them to arise. They should be solved in line with the contractual procedures (McPhee, 2012). According to (Heeren, 2010; Hetteema & Keuvelaar, 2015) it depends on the mandate of the contract manager what his role is. However, it can be considered a part of contract management.

It is important that the potential for a conflict/dispute is recognised in an early stage, as escalation can impact the contract deliverables and increase the cost to both parties (McPhee, 2012). It is the contract manager's role to protect the interests of the client organisation in all cases.

4.3.3 Contract Closure

In this stage, the activities that are associated with closing the project down are executed. This requires evidence from both parties that they are satisfied with the result. Normally, this requires two phases, firstly to make sure internally that there are no outstanding issues, and secondly to secure agreement from the contracting party that the contract has ended. If there are any issues, these should be solved before the contract can be closed, it is important to take this into account during the earlier stages, to prevent unnecessary delays (Else, 2007).

Furthermore, the relevant administrative procedures should be completed, all data should be transferred to the appropriate party, made claims should be logged, and ensured that all records are stored, in case it is ever required (Else, 2007)

4.4 Relation to other roles/team members

According to Knoester (2005) contracts have a multidisciplinary aspect, for example legal, commercial, technical, etc. This requires that contract management serves as an intermediary between the different aspects. One person will often not have all the required contract (management) skills, thus others will need to work together to ensure that all required skills are available (McPhee, 2012).

The application of SCB requires from the start of the commission a clear task division and collaboration. The collaboration model of SCB consists of the following task fields, with the related activities as can be seen in **Table 8**. This requires an integral approach, whereby everyone considers the opinion and interests of the other task fields to reach an integral decision. This ensures better checks and balances in relation to the contract, and in relation to the contracting party (Hettema & Keuvelaar, 2015).

Table 8: Task field SCB (Hettema & Keuvelaar, 2015)

Task field	Activity
Project/Process Management	Management on interfaces, team management, responsible towards client
Project Control	Risk Management, Internal Quality Assurance, Scope Changes, Finances
Technical Management	Correct and complete documents, technical advice, and performance specifications
Contract Management	Procurement, overseeing contract documents, contract management plan, directing the reviews and deciding on potential sanctions

When a for a SCB relevant task is not performed well, there will be a misbalance in the knowledge and management. In case a person has to perform two or more task fields, the risk is that the focus (checks and balances) on certain elements can become less. The staffing of the different roles is the responsibility of the line organisation, who set the required competences for the different roles.

It is a contract specific-/project specific choice to determine the required staffing, which can vary in the different phases of the project lifecycle. In less political sensitive or risky projects the project/-process manager can in the contract formation phase combine his tasks with the task field of contract management.

In Figure 19, the different task fields are shown and their relations with the environment. The process/-project manager has an interface with the stakeholders/delegated client, contract management with the contractor/market and the technical management with the knowledge by means of internal or external advice.

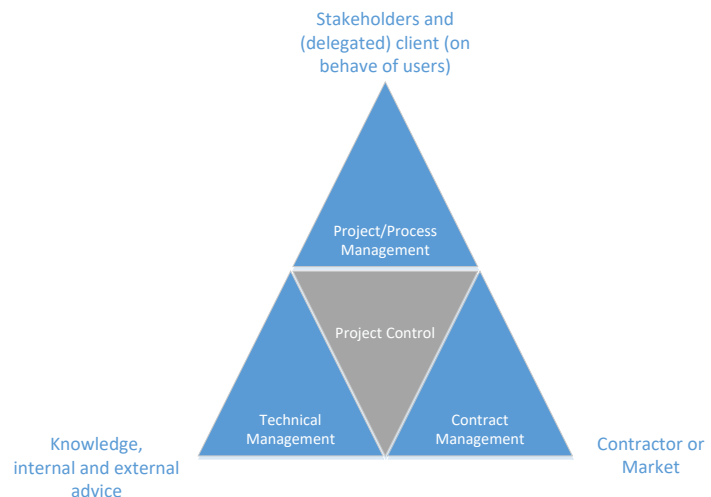


Figure 19: SCB Roles (Hetteema & Keuvelaar, 2015)

The full description of the other roles can be found in Appendix A.

Contract management maintains the daily contacts and when required, conducts the negotiations with the market. The formal responsibility of the client role to the market lies with somebody else, either the integral project manager or someone higher in the rank, this depends on how the mandate is arranged. Depending on how it is arranged in the project/mandate, the contract manager either advises the integral project responsible for the actions that need to be taken, or he has the mandate to decide himself. Furthermore, the person responsible for the field of contract management serves on behalf of the client as the contact person for the contractor. And is responsible for an actual overview of the (proposed) contractual changes (together with the field project control)

The following functions could contribute to the field of contract management:

- The procurement advisor, advises the contract manager on procurement and tender affairs. Together with the technical management and project management the process requirements are drafted.
- Legal advisor: legal advice is on request of the contract management obtained. During DBFMO project the legal advisor is part of the team and oversees the drafting the DBFMO contract.
- Financial- and/or cost advisor: With UAV-GC contracts coordination about the sanctions in the agreement and the application of suspending payments in coherence with the nature of the findings. For DBFMO contracts pre-award, the coordination takes place about the payment mechanism in the agreement and after award he advises on subjects as indexing, valuation of changes and the payment method in relation to the output specifications and monitoring.

The field of contract management has the directing role on the contract document. The technical management contributes to that with input and specification from the engineering. There is a translation of technical and function specifications (TM) to contractual provisions (CM).

The field of technical management reviews, based on their expertise, the contractor on risky processes and products. Reviews could consist of document reviews and contribution to the audits. In the pre-contractual phase these are included in the (concept) review plan, and after contract close the technical management supports the contract management with delivering review capacity and knowledge. Technical management is responsible for the quality of the reviews (document reviews). The project management and contract manager draft together the review mix based on the actual risk documents (Hetteema & Keuvelaar, 2015).

4.5 Contract Management Related Interventions

4.5.1 Pre-Contract Phase Interventions

Procedures

The importance for clear and comprehensive procedures is mentioned by most the sources. The procedures, related to performance, variations, and conflict/disputes escalation contribute to successful of contract management and the relation between the parties. It is important that both parties, including the senior management, support the procedures for their successful implementation (Department of Housing and Public Works, 2016; Elsey, 2007; McPhee, 2012; OGC, 2002).

Establishing clear lines of responsibility and accountability for all decision-making is another important aspect of successful contracting. Ensuring the necessary authorisations and delegations are in place at the beginning of the procurement cycle is an important prerequisite to ensuring that all contracting decisions and payments are valid and legally appropriate. These instruments should be periodically reviewed and kept up-to-date (Elsey, 2007; McPhee, 2012; OGC, 2002).

[Change Procedure](#)

Establish mechanisms to manage changes to the contract and make sure the contract is flexible enough to accommodate change, as even if a good risk assessment process has been carried out, there will still be unforeseen problems (Department of Housing and Public Works, 2016; Elsey, 2007; McPhee, 2012; OGC, 2002). The formal change control procedures contribute to avoiding misunderstanding and ambiguity. The procedures should initiated at the earliest moment, and include procedures to keep all contract documentation up to date and consistent, to ensure that all parties have a common view on the agreed changes (Elsey, 2007).

[Performance Procedure](#)

Both parties need to agree on what KPI's will be measured, and how procedures for monitoring, assessing and taking actions are shaped (Department of Housing and Public Works, 2016). Furthermore, it should be stated clearly what the effect of noncompliance or underperformance is on the payment, and the intent to invoke penalties. (McPhee, 2012)

It is also important to establish a clear statement of the contract deliverables and an effective performance management regime. Link contract payment to satisfactory performance by establishing payment milestones that are linked to contract. This will establish a clear link between in the contract between payments and performance. (McPhee, 2012)

Furthermore, by having a performance regime that allows for ongoing feedback, particularly in relation to critical success factors, this will contribute to minimizing underperformance (McPhee, 2012).

[Conflict Procedure](#)

There should be set procedures for raising issues and handling problems, so that they are dealt with in an early stage, constructively and at the appropriate level within the organisation (Department of Housing and Public Works, 2016; McPhee, 2012; OGC, 2002). This includes an escalation procedure to clearly state at what point people should get involved (McPhee, 2012).

Contract Terms

The contract deliverables and terms should be concise, clear, consistent, unambiguous, and not in conflict with itself or other terms. Moreover, they should be complete, accurate and correct. Furthermore, it should be feasible, achievable, measurable, and verifiable. If those conditions are to limiting or risky, then the contractor needs to work this up in the contract, which will result in a non-optimal price/quality ratio. (Hetteema & Keuvelaar, 2015; McPhee, 2012).

Furthermore, understand contractors/consortium's business objectives and drivers, and obtain senior management agreement to the need that the contractor/consortium need to achieve their objectives within a reasonable profit margin (Eelsey, 2007). Moreover, identify conflicts of interest early on to be able to address actual or potential conflicts (McPhee, 2012)

This can be dealt with by including incentives in the contract by offering increased profit, or other reward for added value/performance to encourage appropriate behaviour (OGC, 2002). Moreover, ensuring that the governance arrangements are fair and allocate the risks to the party best able to manage them (Eelsey, 2007; McPhee, 2012).

4.5.2 Contract Phase Interventions

Administration

Keeping records will help with managing legal and other risks; and meet its accountability obligations (McPhee, 2012). Furthermore, meetings results, measures and actions and share relevant points should be communicated with key stakeholders (Department of Housing and Public Works, 2016)

Communication

Adopt the principles of good communication (Eelsey, 2007). The communication should be open, constructive, non-adversarial and based on mutual understanding (McPhee, 2012; OGC, 2002). Provide positive and constructive feedback (McPhee, 2012). Have regular communication (McPhee, 2012)

During contract performance review meetings the issues should be discussed openly and honestly, be based on facts and data and avoid hidden agendas (Department of Housing and Public Works, 2016) Establish information flows and communication levels at the start of a contract. The three levels being operational (end -users/technical staff), business (contract manager and relationship manager on both sides) and strategic (senior management/board of directors) (McPhee, 2012; OGC, 2002). And separate strategic items from day to day business (McPhee, 2012)

Informal, one on one discussions and interactions between contractor, contract management and relevant staff. It might be beneficial to have several parties undertake contract management/relationship management (McPhee, 2012).

Handling Issues (underperformance/changes/tensions)

Make contingency plans for risks that are the responsibility of the other party, as for your own (House of Commons, 2009; OGC, 2002). Furthermore, risk management an integral part of all contract cycles and the risk reviews should be incorporated in the regular performance meetings (OGC, 2002). This will contribute to gaining awareness of issues at an early stage.

Issues should be addressed as soon as possible, and if possible before they become serious. This will allow to avoid the problem from become worse, or the contractor being confronted by a problem that the client has been aware of for some time. This will make it easier to address the issue at a low cost with minimal disruptions (McPhee, 2012; OGC, 2002). It should be ensured that the contract variations

are not of such level that they significantly change the contract requirements (Else, 2007; McPhee, 2012).

If there are problems, these should not be overlooked for the sake of the relation. Clear, solution-focused communication that leads to improved performance will support the professional working relationship between all parties (Department of Housing and Public Works, 2016).

Ensure that the escalation routes are clear and understood, at the same time, ensure that the issue is resolved as low down in the management tree as possible (McPhee, 2012). It is preferable to discuss the potential issues with the contractor first, either during the regular meetings or separate. Engage the supplier in an open, transparent, and constructive conversation outlining the issue or potential issue and explain decisions in an impartial way. Furthermore, give the contractor an opportunity to explain the cause or nature of the non-performance or compliance (OGC, 2002). This will prevent that formal procedures will need to be used from the start (McPhee, 2012). However, proper change procedures should be used, and no informal contract amendments should be agreed upon (Else, 2007; McPhee, 2012).

Prevent frequent and rapid recourse to the formal contract to overcome problems (McPhee, 2012; OGC, 2002). The first intention should be to reach a mutually accepted solution, where both parties gain the best result given the circumstances. It is important that one party does not feel overly pressured in accepting the solution, as this can lead to escalation or resurface of the problem at a later state (McPhee, 2012; OGC, 2002) Properly managed issues will lead to an improvement of the relation (OGC, 2002).

Behaviour/Relationship

Relations must be managed from the beginning. The contract manager should be involved in the developing of the contract/contract negotiations to ensure effective transitioning (McPhee, 2012).

For the relationship with the other party it is important to take into account the possibility of the contractor/consortium's team changing after award of the contract, leading to a lack of continuity (Else, 2007). Which will result that a new relation will need to be built with the new team.

Attitudes and behaviours, based on trust rather than adversarial models, should be encouraged (OGC, 2002). This is done by having a professional relationship, based on cooperation and mutual understanding. Consider the need for probity and ethical behaviour. By practicing the appropriate attitudes this will assist the promotion of a positive and construction relationship (McPhee, 2012).

The terms of the contract should be enforced in a professional manner based on evidence of contractual performance. If early warning of performance problems is given, and a professional relation is maintained, this should have no negative effects on the relation (McPhee, 2012).

4.6 Conclusions Literature Contract Management

There is a discrepancy in the (international) literature between the relation of contract management and the other roles compared to the documents on system based contract management.

While in SCB the project manager is responsible for the contact with the different stakeholders, the other literature state that this falls under the responsibility of contract management. This difference can be explained with the fact that system based contract management is only a part of what contract management entails. Furthermore, contract management can be applied by different persons, thus the project manager can act based on contract management.

Contract Management serves to ensure that within the contract scope all parties in the contract meet their obligations and achieve value for money. From the start of the project in the pre-contract phase, till contract end the field is involved. In Figure 20: Tasks within Contract Management, the tasks within the field of contract management are given.

Pre-Contract Phase	Contract Phase	Contract Closure
<ul style="list-style-type: none"> •Market Orientation •Contract Documents •Procurement •Contract Management Plan •Setting up SCB 	<ul style="list-style-type: none"> •Contract Administration •Change Management •Performance Management •Relationship Management •Risk Management •Conflict Management 	<ul style="list-style-type: none"> •Finish unresolved issues •Agreement that the work has been completed

Figure 20: Tasks within Contract Management

Several interventions related to the different tasks were identified which focus on the formal and informal interaction between the parties. This shows that contract management is aimed on creating the conditions and managing both types of interactions.

5

Contract Management According Practice

Input from practice was gathered as the field of contract management could have differences depending on the sector/country where it is being used. In section 5.1 the interviews held to gain this input are briefly discussed. Section 5.2 states the goal of contract management and section 5.3 the differences between literature and practice in the tasks assigned to the field. Section 5.4 discusses the area of influence of the field related to conflict situation and in section 5.5 the answer is given on what the area of influence is of contract management.

5.1 Interviews

Fourteen contract managers were interviewed about the field of contract management. From these results (Appendix F: Interview Results Contract Management), in combination with the literature study of the previous chapter, the area of influence of the field of Contract Management as practised by the client can be determined.

From the interviews, it can be concluded that the IPM-model is used by several water authorities and Rijkswaterstaat, however, it is not implemented as such by the Rijksvastgoedbedrijf. The pre-set task division at the Rijksvastgoedbedrijf is less strict, therefore the perception on the field can differ. Furthermore, contract management can be applied by different roles and is not limited to the role of contract manager.

5.2 Goal of Contract Management

Based on the answers during the interviews on what the goal of contract management is, it can be concluded that contract management is about the interaction between the parties of the contract, to ensure that the requirements of the contract are met. This agrees with what was found in the literature.

The interviewees, just as the literature are divided upon the question if only value for money should be achieved, or that should be strived for maximum value for both parties. All agree that at least value for money should be achieved.

5.3 Contract Management Phases

In agreement with the literature the interviewees state that contract management should oversee the entire process of contract creation and execution, and manage everything that is within the scope of the contract.

5.3.1 Pre-Contract

The tasks in the pre-contract phase found in the literature are backed by the majority of the interviewees. However, to some, the contract manager only becomes involved after the contract has closed. This can be related to the organisation/their own experience with the role, and when discussing the field of contract management, it should be considered much broader than just the contract manager role.

5.3.2 Contract Phase

All the tasks as found in the literature were also given by the interviewees. The emphasis was put on the relation between the parties. The other elements were mentioned, although not by every interviewee.

5.3.3 Contract Closure

The contract closure was not mentioned specifically by the interviewees, a reason for this was that the context of the interviews was the design and build phase. While the relation of the other phases on the design and build phases was questioned (giving the data for the pre-contract phase). It can be assumed though that contract management will take care of the closure of the contract, as it has to do with resolving earlier issues and agreement that the work has been done.

5.4 Area of Influence Conflict Situations

During the interviews on the topic of conflict escalation, the question about the area of influence of the different team members was raised (Appendix G: Results Interviews Conflict Escalation). The interviewees stated that it depends on the project how the exact task division is, however, based on their answers the different conflict stages can be related to the different project team roles.

As for the field of contract management, it is involved in the entire escalation process, from the arising of a disagreement till it has escalated into a dispute. Contract Management is related to the interaction between the parties, and the issues that are related to the contract. It can change depending on the project and organisational context who the mandate has to make the decision, acting from the field of contract management.

In Figure 21: Role Escalation the involvement of the different roles based on the interviews, combined with Figure 12: Escalation Process (3.2 Several Types of Escalation) is presented.

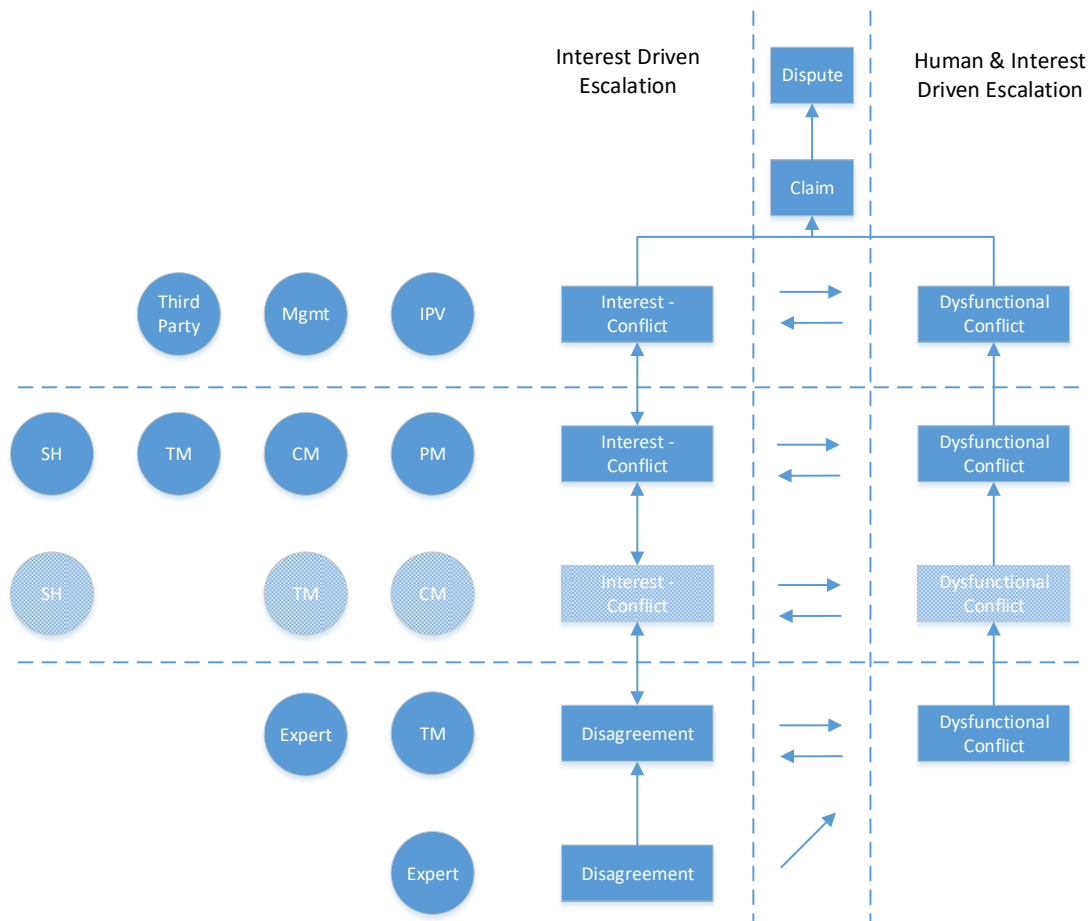


Figure 21: Role Escalation

At the earliest stage (at the operational level) when there is a disagreement, only the experts on the issue are involved, for example the security experts for a security issue. When they cannot reach an agreement on the issue, the technical management gets involved in the discussion. At this stage, it could still be a disagreement, or already a dysfunctional conflict when it is no longer about just the issue at hand.

After this escalation to a higher level in the project organisation, the dysfunctional conflict can de-escalate towards an interest driven conflict. This can be caused by different people being involved in the discussion, where other human aspects may be at play. It also goes around the other way, due to different human aspects, the interest conflict can become a dysfunctional conflict.

If the intervention of the technical manager did not resolve the issue, the disagreement will further escalate. The disagreement then either becomes an interest driven conflict (due to the difference in interest of both parties) or continues as a dysfunctional conflict.

In the next stage, the project and contract manager, acting based on the field of contract management are involved in the discussion. It depends on the project/organisation if first the contract manager is involved in the talks, and then later the project manager, or that the project manager is leading from the start. The interviewees stated though that the project manager could be doing/leading the contract management for the project.

When it cannot be resolved at that stage, it is escalated towards the senior management. And a claim/dispute after that. This stage falls outside the scope of this research and therefore has not been questioned.

5.5 Intermediate Conclusions: Area of Influence Contract Management

Contract Management serves to ensure that within the contract scope all parties in the contract meet their obligations and achieve value for money, or try to improve on what has been agreed. As result of successful contract management, the contract will be without disputes, where value for money is maximised, and there is a good relation between the parties

The field of contract management is involved during the entire project lifecycle, starting in the pre-contract phase during the market orientation till the moment the contract has finished. In Figure 22 an outline for the responsibilities of the field of contract management can be seen, here there are no differences between literature and practice.

Pre-Contract Phase	Contract Phase	Contract Closure
<ul style="list-style-type: none"> •Market Orientation •Contract Documents •Procurement •Contract Management Plan •Setting up SCB 	<ul style="list-style-type: none"> •Contract Administration •Change Management •Performance Management •Relationship Management •Risk Management •Conflict Management 	<ul style="list-style-type: none"> •Finish unresolved Issues •Agreement that the work has been completed

Figure 22: Outline Responsibilities Contract Management

Contract Management is limited by the scope of the contract in the contract phase, and is related to all contract related activities which includes all the interactions with the other party. In the field of contract management different persons are involved at the different stages of the contract cycle, and it is thus not only applied by the contract manager.

The role of contract management is two-fold in relation to conflicts. The field has to contribute to creating the conditions to ensure that disagreements will not escalate, and if it starts to escalate, to ensure that it will not any further. Even if a conflict escalates, it need to be ensured that this happens at a constructive manner, to prevent long lasting damage to the relation between the parties.

Interventions

In this chapter, the interventions in the earlier defined escalation process that fall within the area of influence of contract management are discussed. Section 6.1 and 6.2 discuss the sources that gave input for the interventions. Section 6.3 describes the applied analysis that led to the formulation of the interventions. In section 6.4 the results from the analysis are given, presenting the main interventions with their related practical interventions. Section 6.5 gives an answer on the sub-question which potential interventions there are in the escalation process which will reduce the negative effects of the escalation of disagreements and conflicts.

6.1 Literature & Interviews

In the literature study about contract management (section 4.5) a list of interventions was found, which were not specific for the escalation factors that were defined this research. Based on the insight of the researcher the interventions were linked to the different factors. The result can be found in Appendix H.2.2 Interventions Literature Contract Management.

The same was done for the interventions that were mentioned during the variety of interviews that were held during this research. The interviewees mentioned a variety of interventions during the interviews about contract management and conflict escalation. These interventions have been coded when analysing the interviews and will be used as an extra source to identify interventions. The result can be found in Appendix H.2.1 Interventions from Interviews.

6.2 Case Studies

Four case studies were conducted to gain empirical data about the interventions that could be applied which would lead to reducing the negative effects of conflict escalation. In Figure 23, the details for the projects (of the Rijksvastgoedbedrijf) are given, which roles were interviewed, and what documents used.

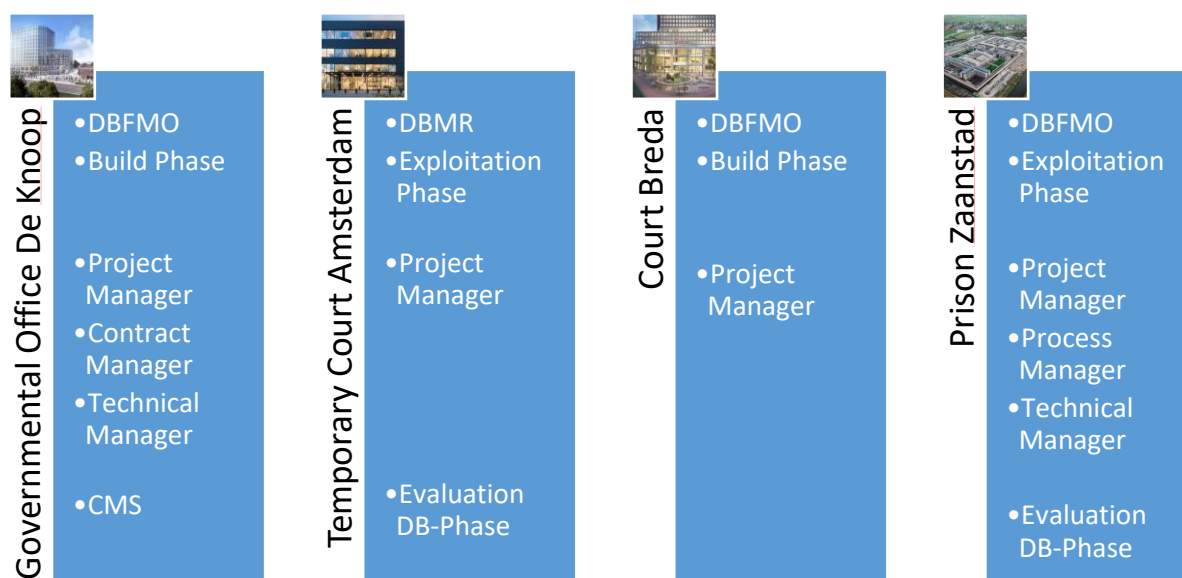


Figure 23: Case Study Projects

Of each case study, the used interventions were identified, and which interventions should/could have been used in hindsight. As not all projects were in the exploitation phase only for the temporary court Amsterdam and prison Zaanstad the evaluations of the DB-phase were available. In Appendix E: Case Study Protocol Interventions the protocol for the case studies can be found.

6.3 Analysis Found Interventions

The found interventions were linked to the escalation factors (3.4.2 Conflict Escalation Factors) divided per source. Then the interventions were sorted based on overlap (same type of intervention) for each factor. It was noticed that several interventions influence different factors, indicating that there is a correlation between them. From this list of interventions, the ones that were used during a project with little to no conflicts or were suggested by literature were selected. Furthermore, the interventions that were considered lessons learned (resulting from the evaluations) and those that were mentioned by different sources were selected as well.

For each of the selected interventions, based on the insight of the researcher it was stated which sub-factor they influence and in which stage (prevention or during disagreement) they should be applied. This led to the next step, which was the formulation of main interventions.

The main interventions are formulated based on the insight of the researcher and the found interventions. The main intervention should capture the main essence, while the (sub)interventions found in the literature provide the practical examples on how to achieve it. In H.4. Analysis Interventions these interventions with the factors that they influence are given.

6.4 Results Intervention Analysis

In Figure 24, an outline is shown for preventing the escalation. As mentioned before in section 3.2, it is not possible or required to prevent all conflicts. The difference between the interests of the parties can be too large to resolve the issue, resulting in escalation of the disagreement/conflict. To prevent dysfunctional conflicts, a cooperative interaction between the parties needs to be created. This is done by creating the right mindset for both the client as the contractor.

The chance on an interest conflict can be reduced by managing the interests of all those involved. In the next paragraphs these concepts will be further explained.

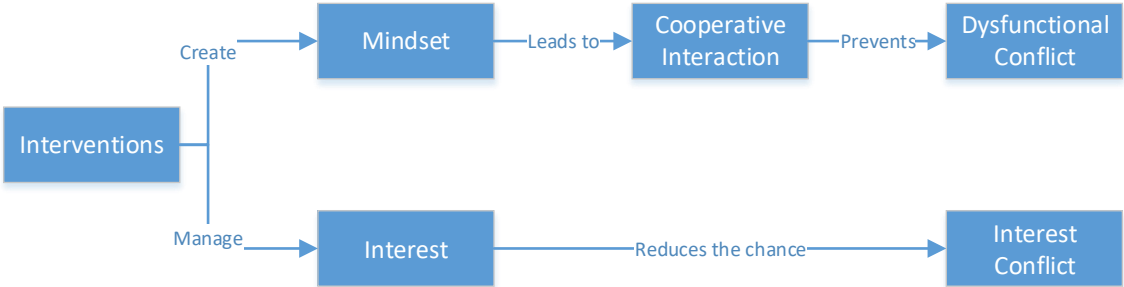


Figure 24: Intervention Outline

6.4.1 The Area of Influence of Contract Management

The area of influence was identified in section 5.4 Area of Influence Conflict Situations, it was stated there that the field of contract management is involved from the planning phase till contract end. The field is involved in the writing the contract documents, tender and interaction with the other party, limited by the scope of the contract. The field can be applied by different persons and roles in the project team, and as such, the majority of the found interventions fall within the area of influence of contract management. However, during the case studies also other interventions that do not fall within the area of influence of contract management have been found, if this is the case it will be specified for the given intervention.

6.4.2 Cooperative Interaction (collaboration)

From the literature (section 2.7.2 Interaction) it follows that cooperative interaction needs to be created when dealing with conflict situations, which is supported by the results of the interviews (section 3.3 Conflict Approach). During the case studies, and other interviews on the topic of interventions, the question was asked what cooperative interaction, or collaboration entails. While there is no uniform description used by the different interviewees, a couple of elements can be distilled on their answers (Appendix H: Interventions).

The interaction between the parties (collaboration) can be defined as follows:

Collaboration is working towards a common goal while considering each other's interests and objectives, by thinking along with the other party and facilitating their (problem solution) process, without taking the other's responsibility.

To do so, a culture needs to be created in which both parties are willing to act on such a way. It is not possible to force this interaction, only the conditions for it can be created. Furthermore, as discussed in (section 3.2 Several Types of Escalation), two different types of escalation can be distinguished. Either driven by divergent interests, or by a combination of interests and human aspects.

Cooperative interaction would only be possible when the negative human aspects are subservient to the positive human aspects. With other words, the attitude and behaviour of those involved need to support the cooperative interaction with the other party, and they would need to be willing to interact the same.

When there is cooperative interaction between the parties, the issue at hand can be discussed while considering the interests of the involved parties. This can lead to agreeing on a solution for the problem or in mutual agreement decide that the issue is too complex, and that a third party is required to resolve the issue. With other words, even with cooperative interaction the disagreement can still escalate towards a conflict, claim, and dispute, just it happens on the "right" way. This means that the damage to the relation will be limited compared to human-interest driven escalation, and that the transactional cost can be expected to be less.

This leaves the questions, how to create the required conditions for cooperate interactions, and what can be done about the interest driven escalation. Which will be addressed in the next paragraphs.

6.4.3 Proposed Interventions

As described in the analysis, several main interventions were formulated based on the insight of the researcher, the overlap between the found interventions and the escalation factors. In Table 9, the formulated main interventions and the relation to which factors are influenced by them is given. In H.4. Analysis Interventions the relation between the (sub)-interventions and the different factors is given as well.

Table 9: Interventions

Categories	Attitude and Behaviour							Context		Interest		Phase		
Main-Factors	Involved Personalities	Trust	Continuity	Competences	Personal Circumstances	Atmosphere	Personal Conflict Approach	Personal Interest	Contract Documents & Procedures	Past Performance	Project Interest	Stakeholder Interest	Before Disagreement	During Disagreement & Conflict
Main Interventions	Requirements for Cooperative Interaction							Influence		Drivers		Phase		
Work to avoid friction between the involved individuals, signal and handle it at an early stage if it does occur.														
Have the right (mixture of) people in both teams														
Create a "we together" and not "we vs them" culture.														
Create trust between the parties														
Have contract terms that are considered fair														
Ensure there is continuity in the project team.														
Consider the long terms effects of actions														
Keep issues small with a limited impact on interests and objectives of both parties														
Act in the spirit of the contract														
Objectively look at who is responsible														
Awareness of the objectives and interests of the other party														
Ensure that client and governmental stakeholders follow the same line														
Make clear agreements with your own team and the contractor on how disagreements and conflicts will be managed.														

For each of the main interventions the found practical interventions are given that will support the main intervention. The found (practical) interventions are not related to one contract phase, and each main intervention has practical interventions related to both the pre-contract and contract phase.

1. Work to avoid friction between involved individuals, signal and handle it at an early stage if it does occur.

The intervention has to do with the interaction between the involved individuals, which can be influenced by a variety of sub-factors. Friction can lead to individuals taking a different approach to matters, for example, making them less open/unwilling to consider the other parties point of view.

It is not possible to prevent friction in every case; therefore, effort needs to be put into preventing it from arising, and signalling it when it occurs at an early stage. Then it needs to be handled as soon as possible in the right setting and timing. Several interventions that will support this main intervention were identified:

- Invest in the informal relation between those involved.
- Check-in during meetings, where the question is raised on how it is going with people, and if there is anything troubling them.
- Have an external observer reflecting on what transpires during a meeting.
- Have appointed team members from both ON/OG reflect on the interaction between both parties.
- Have project team members follow feedback and conflict management training.
- Make sure that those who interact with the other party have adequate social skills.
- Be aware of what type of personality the key players are.
- Work on the same project location.
- Mention it when something bothers you, do not keep it to yourself and let it affect your judgement
- At project start up, formulate shared values, and let people during the project know when they do not act according to those.
- Provide positive and constructive feedback
- Keep things professional and not do not let it become personal.
- Make it clear what the reason is when information is requested from the other party, and prevent meaningless (information) requests.
- Respect each other.

2. Have the right (mixture) of people in both teams

The importance of having qualified team members in both the teams of the contractor as the client was often mentioned. Those that interact with the other party need to have adequate social skills, a willingness to act in the spirit of the contract and a mixture of personalities needs to be present in the teams to allow for a healthy discussion. Lastly, a team assessment of both client and contractor could be done when the interaction is not running smoothly.

At this moment, there are no interventions that will allow the client to select the team members of the contractor, all that can be done is expressing the need for selecting people with the right personalities and competences. Therefore, this intervention is only partly in the field of contract management.

3. Create a “we together” and not “we vs them” culture.

In the project culture, there needs to be a willingness to cooperate with the other party so that not every party acts solely for their own gain. This requires that a culture is created that both parties are in it together.

Practical interventions:

- Formulate an ambition as client for the envisioned culture/collaboration before the dialogue phase.
 - Create a shared goal (collaboration).
 - Create a shared goal (innovation).
 - Discuss this ambition during the dialogue phase.
 - Request products in the dialogue phase related to the collaboration/ambition that will make the vision of the contractor on this more concrete.
 - Give weight in the award criteria to those products.
- There are clear, mutually agreed on procedures and agreements, make the products a shared product after contract close, so that both parties support it
- During the contract phase, from the start, reflect and pay attention to the ongoing collaboration/culture and keep it an active topic.
- Share risk registries, and discuss how you can contribute or assist with managing each other’s risks.
- Have shared training (or other) sessions.
- Celebrate successes.
- Appreciate good work of the contractor, and let them know.

4. Create trust between the parties

To be able to have trust between the parties, they need to understand each other, be transparent and act honestly. Trust will allow for that parties are willing to talk about their interests and objectives, and not keep their cards close to their chest. This will allow that the divergent interests that are present are addressed.

Practical interventions:

- Give the right example in your behaviour, act according to the set of rules you have agreed upon, if you do not do it yourself, you cannot expect it from the other party.
- Dialogue product: make the budget for the quality system of the contractor available, so an indication can be gained about the effort they will put into it.
- Use SCB to monitor the processes of the contractor
- Give substantiation as to how a decision is made, and provide trade-off matrixes so that an informed decision is made
- Register what decisions have been made, and what the motivation was for them
- Share information when required, do not hold your cards close to your chest
- Provide insight in your processes, so the other party know what to expect
- “Kijkje in de keuken,” have the contractor give insight in their processes, as how to do the work
- Agreement is agreement, do not come back on them
- Make clear what is important for the client, and ask what is important for the contractor.

5. Have contract terms that are considered fair

The perception of the fairness of the contract terms is important, and that when the terms are considered unfair that parties do not feel forced by them. A feeling of unfairness can affect the decision making of a party as they can look to “rectify” this unfairness.

Practical interventions

- Have a fair discount system
- There should be process agreements about the evaluation of the discount system. This evaluation should be at regular intervals and if a discount has been unjustly given there should be room to discuss this.
- Link payments to satisfactory performance of the contractor, by establishing payment milestones that are linked to the contract.
- Gain support from senior management, that the contractor needs to be able to make a profit in the case that they occur losses due to circumstances outside their control.

6. Ensure the continuity within the project teams

Not being able to act in the spirit of the contract has been identified as an escalating factor. To be able to act in the spirit, there needs to be a collective memory of the decision making behind the terms of the contract so that it can be determined if the adjustment falls within the solution space.

Furthermore, having a “personal bond” with your counter parts can help when dealing with issues, as you better understand how the other will act and there is more willingness to consider other points of view.

Practical interventions

- To keep people with the project, make sure that they stay interested in the project.
- Invest in new people to bring them up to speed about the project
- Express the need for continuity to the contractor and client.
- Make sure that people are involved in different project phases, so that knowledge is preserved when the project enters a new phase. Or that they will be available for questions even after they have left the project.

These interventions have in common that you cannot enforce that people stay working on the project, as they could get a new job. Furthermore, continuity cannot be enforced on the other party, and therefore it falls only partly within the area of influence of contract management.

7. Consider the long-term effects of actions

The past performance, the actions and experience people have from the past, related to the tender, contract, and conflict phases, has an influence on how people respond in the present. Being aware of the effect that past actions can have on the present is critical.

8. Keep issues small with a limited impact on interests and objectives

The impact of the disagreement has an impact on the amount of divergence of the interest of the parties. It is key to keep this divergence as small as possible and this requires that issues are noticed at an early stage, and dealt with on the best way for both parties.

- Alert each other when potential problems/friction is noticed
- Use SCB not only to monitor based on risks, also interact with the contractor to help them/make them aware of potential issues.
- Do not avoid issues, deal with them as soon as they are noticed
- Make clear what your interests and objectives are, and ask the same from the contractor
- Limit the number of changes during the contract phase
- Allocate the risks to the party being best able to manage them

9. Objectively look at who is responsible

It has a significant impact on the escalation who is held responsible for the cause of the disagreement, especially when both parties hold each other responsible. It can lead to a quick escalation when parties are prejudiced about who should bear the responsibility. By being objective about who is responsible will prevent this escalation. And even though the other party is responsible, by looking at what you can facilitate without compromising your own interests, the impact can be reduced.

10. Act in the spirit of the contract

When a disagreement arises between the parties, they can try to resolve it by looking at what is written in the contract terms. Another approach is to act in the spirit of said terms. This means that a solution is found within the solution space that was thought off when writing the contract term. If the new solution falls within this solution space there should not be any problem. This allows for more freedom in finding a solution that could contribute to the interests of both parties, decreasing the escalation drive of divergent interests.

11. Awareness of the objectives and interests of the other party

Parties need to be aware of the interests and objectives of the other party, which will allow them to take these into account in their decision making. This can reduce the perceived divergence of interest, leading to a reduction of the potential impact of the situation and decreasing the chance on an interest conflict.

Practical interventions:

- Discuss during the dialogue phase the interests and objectives of both the client and contractor.
- At project start-up, place the interests and objectives of both parties on the agenda.
 - Make sure that during the contract phases everyone stays aware of these.
- Keep in the decision making the interests and objectives of both parties in mind. Base your decision making on the weight of the different interests. If the solution for the contractor would significantly impact their interests, while it would be of little to none consequence for the client, then a better solution could be sought.
- Look for opportunities to strengthen each other, by considering the interests of the other party, even if it is not directly related to your own side.

12. Ensure that the client and the (governmental) stakeholders follow the same line

In the situation of the RVB, there are several clients and users whose interests and goals need to be considered. While a solution could be acceptable for the RVB, this might not be the case for one of the stakeholders. The demands of the stakeholders can limit the solution space, and increase the divergence of interests.

Practical interventions:

- Manage the expectations of the stakeholders.
- Make it insightful what the trade-off of decisions/wishes is, to allow for a rational decision to be made.
- Show the stakeholders what the result will be like.
- Have a shared opinion before talking to the contractor to prevent confusion or the contractor making use of the contradicting opinions.

13. Make clear agreements with your own team and the contractor on how disagreements and conflicts will be managed

When the situation arises that there is a disagreement between the client and contractor it is important that there are clear agreements on how to deal with it. This will prevent confusion and allow for the disagreements (or conflict) to be resolved as fast as possible, reducing the related transactional cost.

Practical interventions:

- Do not overlook problems for the sake of the relation.
- Get an (external) objective person involved when the discussion is stuck.
- Make clear agreements when and who will intervene when people are stuck in their view of the situation.
- Deal with issues per situation, do not combine several issues in one discussion.
- Keep communicating, whatever happens.
- Focus on trying to understand the situation.
- Follow the procedures when dealing with an issue, do not make informal decisions.
- Do not enforce something on the other party, as it would likely come back at a later stage.
- Be consistent in your actions, be predictable for the other party.
- Discuss the responsibilities of the different team members with the other party, and make clear work agreements for procedures that are often used.
- Only discuss matters in one project layer at the same moment.
- Escalate a disagreement to a higher level in the organisation when the discussion gets stuck.

6.5 Intermediate Conclusion: Interventions

Cooperative interaction between the parties needs to be created to reduce the negative impacts of the escalation of disagreements and conflicts. Based on the interviews the definition for cooperative interaction was redefined to: *“Cooperative interaction is working towards a common goal while considering each other’s interests and objectives, by thinking along with the other party and facilitating their (problem solution) process, without taking the other’s responsibility.”*

To be able to achieve this kind of interaction, thirteen main interventions were formulated based on the theoretical and practical interventions found during the research. These interventions will create the conditions required for cooperative interaction and reduce the chance that conflicts will escalate due to divergent interests of the involved parties. The interventions being:

- Work to avoid friction on a personal level between the involved individuals, signal it at an early stage, and handle it as soon as possible.
- Have the right (mixture) of people in both teams
- Create a "we together" and not "we vs them" culture.
- Create trust between the parties.
- Have contract terms that are considered fair.
- Ensure there is continuity in the project team.
- Consider the long terms effects of actions.
- Keep issues small with a limited impact on interests and objectives of both parties.
- Act in the spirit of the contract.
- Objectively look at who is responsible.
- Awareness of the objectives and interests of the other party.
- Ensure that client and governmental stakeholders follow the same line.
- Make clear agreements with your own team and the contractor on how disagreements and conflicts will be managed.

In total, there are 78 practical interventions that are related to these main interventions, and these can be applied depending on the context of the project. Not all interventions should be applied in the same project, as there is overlap between the factors that are influenced.

The results of the research need to be validated as the conclusions were reached based on the insight of the researcher, and these will need to be confirmed before they can be considered valid. Section 7.1 describes the design for the validation steps. Section 7.2 gives the results for the survey held regarding the escalation factors and section 7.3 the results of the validation interviews. Section 7.4 gives the conclusions that can be drawn based on the validation.

7.1 Validation Design

In the validation two different methods were used, namely a survey and face-to-face interviews. There are several reasons for this distinction between the two methods chosen. Firstly, that the topic is too broad to discuss in a single interview. Secondly, to determine the (impact/relevance) of escalation factors a large set was required, something that was not attainable when doing interviews. Lastly, the results of the survey could raise questions, which can then be asked during the validation interviews.

The survey served to validate the relevance of the identified escalation factors. For each sub-factor (as identified in section 3.4.2) the impact on the escalation process, on a scale of 1-5, including the option to make the factor irrelevant had to be given. One meaning that the sub-factor has limited influence, while 5 mean that the sub-factor has a significant influence. The factors would be considered relevant if a significant majority of the respondents rated them to have an influence. A group of around 40 all with experience with conflicts during the design and build phase of a project with an integrated contract will be approached to answer the survey. The full protocol for the survey can be found in Appendix I: Validation Survey.

The aim of the interviews is to validate the models and frameworks as they represent the mechanisms for the escalation process as found in this research. It can be analysed if the correct assumptions are made by explaining the different relations and elements of the models/frameworks, and requesting the interviewees to respond on it when they disagree or have doubts.

Furthermore, for the interventions, it needs to be determined if the interventions that are formulated will contribute reducing the negative impact by intervening in the described processes, if they are feasible to apply and if they fall within the area of influence of contract management. The protocol (and results) for the interviews can be found in Appendix J: Validation Interviews.

7.2 Survey Escalation Factors

In total 25 of the 41 approached responded, all with experience with conflicts during the design and build phase of a project with an integrated contract.

On the next page the results of the survey are given in Table 10: Survey Result Escalation Factors. The mean of the impact is above the mean of the potential scores for all factors. There is a difference in the distribution of the answers of the surveyed for the different sub-factors. For some, the opinion is reasonable unified, while for others it is spread. As it was asked from the surveyed to answer based on their own experience, the difference in score could be related to that. Some surveyed might have experienced some sub-factors more than others.

In the survey, it was not questioned to score the different factors in relation to the other. Therefore, no conclusions can be drawn which sub-factor has more impact than the other. It can be concluded though that all factors are relevant in the escalation process.

There are a couple of sub-factors that stand out, which will need to be questioned in the second part of the validation. The continuity sub-factors score around average, while in several interviews this factor was mentioned to have significant impact on the ability to act in the spirit of the contract and to work with your counterpart. While the competence, to be able act in the spirit of the contract is found to have a significant impact by the surveyed.

While the personal circumstances were thought to have the same effect by the researcher, this is not the case according to the surveyed. The sub-factor work stress is considered more important than the personal events in the life of the individuals.

The effect of the tender phase on the rest of the project is something the surveyed disagree on, the same for the fairness of the contract conditions and the financial state of the organisation. This were also sub-factors that were mentioned in the interviews, and on which there is no shared opinion.

The difference could have to do with how the sub-factor was interpreted by the surveyed, and it would be possible that therefore people's opinion differed. Furthermore, as mentioned before, the personal experience of the surveyed can differ, causing some to have experienced a certain factor in a conflict situation where it had a significant impact, while others have not experienced this.

Table 10: Survey Result Escalation Factors

Factor	Sub-Factor	Mean	Measure of Influence on Escalation					
			1	2	3	4	5 Not Relevant	
Personal Conflict Approach	Spirit of Contract	4,3	0%	0%	20%	28%	52%	0%
Project Interest	Impact Solution	4,2	0%	4%	12%	40%	44%	0%
Project Interest	Financial state of the project	4,1	0%	4%	8%	60%	28%	0%
Project Interest	Responsibility	4,1	4%	4%	12%	40%	40%	0%
Trust	Understanding	4,0	4%	4%	20%	28%	44%	0%
Atmosphere	Culture	4,0	4%	12%	4%	40%	40%	0%
Competences	Social Skills	4,0	4%	8%	16%	32%	40%	0%
Trust	Honesty	4,0	4%	4%	16%	44%	32%	0%
Past Performance	Conflict	3,9	0%	0%	24%	60%	16%	0%
Atmosphere	Interaction between individuals	3,8	0%	12%	12%	44%	28%	4%
Contract Documents	Communication Procedure	3,8	4%	12%	12%	48%	24%	0%
Personal Interest	Discipline	3,7	12%	4%	8%	52%	24%	0%
Trust	Transparency/Openness	3,7	0%	12%	16%	40%	28%	4%
Past Performance	Contract Phase	3,7	0%	4%	40%	36%	20%	0%
Competences	Experience	3,7	4%	20%	4%	48%	24%	0%
Personal Interest	Career	3,6	8%	8%	20%	40%	24%	0%
Personal Circumstances	Work stress	3,6	0%	8%	28%	56%	8%	0%
Continuity	Spirit of Contract	3,6	4%	20%	8%	32%	32%	4%
Contract Documents	Escalation Procedure	3,5	0%	12%	24%	48%	12%	4%
Continuity	Personal "Bond"	3,4	4%	16%	16%	40%	20%	4%
Past Performance	Tender Phase	3,4	8%	16%	28%	20%	28%	0%
Involved Personalities	Clashing Personalities	3,4	0%	20%	20%	44%	12%	4%
Contract Documents	Fairness Contract Conditions	3,2	4%	20%	24%	20%	24%	8%
Project Interest	Financial state of the Organisation	2,9	12%	28%	32%	16%	12%	0%
Stakeholder Interest	Involved Gov. Org.	2,8	12%	16%	48%	24%	0%	0%
Stakeholder Interest	Environmental Stakeholders	2,8	8%	28%	40%	24%	0%	0%
Personal conflict Approach	Conflict Preference	2,8	16%	28%	20%	36%	0%	0%
Personal Circumstances	Personal Events	2,7	16%	16%	36%	24%	4%	4%
	Average	3,6	5%	12%	20%	38%	24%	1%

7.3 Interviews Conflict Model and Interventions

The aim of the interview is to validate the models and frameworks as they represent the mechanisms for the escalation process as found in this research. And to determine if the interventions will contribute to mitigating the impact of the escalation of disagreements and conflicts. In the next section the required changes, and the rejected interventions will be discussed, the full results, and protocol can be found in Appendix J: Validation Interviews.

7.3.1 Conflict Models

The models found in Table 11 were confirmed in the interviews and the underlying assumptions supported.

Table 11: Validated Models

Section	Figure and Name
3.5	Figure 16: Conflict Escalation Model
3.4.1	Figure 13: Team(member) Conflicts
5.4	Figure 21: Role Escalation
3.4.2	Figure 14: Escalation Factor Framework

7.3.2 Interventions

The majority of the interventions listed in 6.4 Results Intervention Analysis were confirmed by the interviewees to contribute to intervening in the escalation processes. This includes the definition for the cooperative interaction that needs to be created, the relation between the interventions and creating this type of interaction. However, there were some interventions that required adjustments to be made to them, and one main intervention was rejected. There is some disagreement about the amount of effort, and how far to go in using the proposed interventions. Partly this depends on the project context (size, contract type) and on principle, how much information do we want to share.

Sub-intervention: Work on the same project location

In this sub-intervention, it needs to be included that both teams can work on the same project location, however, they will need to be in separate rooms/buildings.

Sub-intervention: Mention it when something bothers you, do not keep it to yourself and let it affect your judgement

For this sub-intervention it is important that this happens in the right setting and timing. Furthermore, that follow up actions are taken when needed. Just mentioning it is not enough.

Sub-intervention: Give weight in the award criteria to those collaboration products

Partly validated, it was mentioned that it is also an option that minimum criteria can be set for certain products, without making them part of the award criteria. This will prevent that either a contractor is awarded the work based on his average score, or that while some elements score good, others will not. Which can lead to unwanted effects, and therefore missing of giving importance to the products to increase the chance on better interaction during the contract phase.

Sub-intervention: Give substantiation as to how a decision is made, and provide trade-off matrixes so that an informed decision is made

Partly validated, there was a contradiction between two interviewees, according to one it is important that substantiation is given to the other party, while for the other interviewee this goes too far and it should not be done. one interviewee found this important, another thought this was going too far. The other two though this intervention could contribute.

Sub-intervention: Agreement is agreement, do not come back on them

Partly validated, need to be added that you need to be able to handle a change when required.

Sub-intervention: Create a shared goal (innovation)

Partly validated, while it could help having this goal in the project, the innovative aspect should not just be created to have this goal. It is either part of the project and then it could contribute, just an innovation goal should not be created for the sake of it.

Main-Intervention: Issues are being kept small with a limited impact on interests and objectives

Rejected, all agreed that while it is in essence correct, it is not possible to achieve as you cannot control what happens. It should be reframed to "Parties agree on the content of the issue, and issues are noticed and dealt with in an early stage"

Main-Intervention: Parties act in the spirit of the contract

Validated, although you need to ask yourself why it is required, and why it was not noticed before.

Sub-Intervention: When a disagreement arises between the parties, they can try to resolve it by looking at the contract terms what is written there, or act in the spirit of the terms.

Partly validated, the way DBFMO contracts are currently written, makes it complicated to act on this way.

7.3.3 Survey

The continuity sub-factors score around average, while in several interviews this factor was mentioned to have significant impact on the ability to act in the spirit of the contract and to work with your counterpart. While the competence, to be able act in the spirit of the contract is found to have a significant impact by the surveyed.

This can have to do with the perception of both factors. While to some continuity is a key requirement to be able to act in the spirit of the contract, it might not to others. Having a good transfer of knowledge could handle the knowledge loss because of continuity. Having the skill/competence/character aspect that one is willing to act based on the spirit is in that case more important.

While the personal circumstances were thought to have the same effect by the researcher, this is not the case according to the surveyed. The sub-factor work stress is considered more important than the personal events in the life of the individuals.

It is suspected that in the answers people scored them relatively to the other, explaining why work stress is deemed to have a great impact. Furthermore, the survey question for personal events was not framed that well. It was left in the open what type of personal events were referred too, and it could also have been "positive" events. Moreover, work stress is considered more recognisable for those interviewed.

The effect of the tender phase on the rest of the project is something the surveyed disagree on, the same for the fairness of the contract conditions and the financial state of the organisation. This were also sub-factors that were mentioned in the interviews, and on which there is no shared opinion.

The interviewees were surprised about this, as they had ranked those factors higher than the average. No explanation was found other than that it could have to do with the experience of people, or the

perception of what plays a part. Furthermore, it was stated that several survey questions required some thinking to find out what was searched for, which could also have played a role in the spread of the answers.

7.4 Intermediate Conclusions: Validation

All the formulated escalating factors in this research were validated during the survey. Although for some factors the opinions of the surveyed differed as to the impact on the escalation of disagreements and conflicts. However, the overall outcome shows that all factors have an impact on the escalation.

The different models with their underlying assumptions that were created in this research were validated as well. No comments were made about the models and therefore no adjustment need to be made to them.

The interventions were generally validated as contributing to preventing the escalation of conflicts, although some adjustments need to be made to some interventions to make them more clear and feasible. These changes will not lead to changes of the principles behind the interventions.

There is some disagreement about the amount of effort, and how far to go in using the proposed interventions. Partly this depends on the project context (size, contract type) and on principle, how much information do we want to share. In appendix J.6. Adjusted Intervention List the adjusted list of interventions based on the validation can be found.

Furthermore, there are limitation regarding the conditions of the contract. The interventions should not lead to alternative procedures and terms which coexist beside or even contradict the contract terms.

Conclusion

The aim of the research was to identify the factors that lead to the escalation of disagreements, and formulate related interventions in the escalation process that fall within the area of influence of contract management. In this chapter, the conclusions of this research be given. In section 8.1 the answers on the main and sub-questions are given. Section 8.2. provides several recommendations based on the research. Section 8.3 describes the limitations of this research and section 8.4 gives relevant topics for further research.

8.1 Answers Research Questions

First the different sub-questions will be answered before an answer on the main question will be given.

8.1.1 Sub-Questions of the Research:

Sub-question 1: What are the conflict escalation processes?

Disagreements are caused by a combination of project and process factors. These disagreements can escalate towards a conflict based on the chosen conflict management style by each party. The choice for the style, as depicted in Figure 25, depends on the strategic choice a party makes which is determined by their interests and those of their stakeholders. Furthermore, the strategic choice can (un)knowingly be influenced by the attitude and behaviour of those involved which is determined by a combination of human aspects.

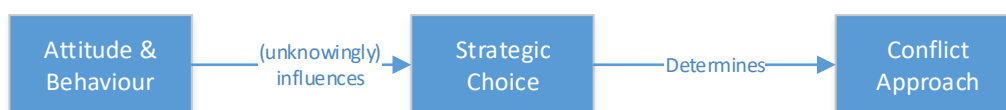


Figure 25: Relation factors to decision making

This leads to two types of escalation, either driven by the divergent interests of the involved parties, or by a combination of divergent interests and the attitude and behaviour of those involved. The human & interest driven escalation will continue to escalate till the human aspects have been resolved. Then there are two options, the situation can be deescalated and solved, or it will continue to escalate due to the significance of the divergent interest.

Sub-question 2: Which factors influence the conflict escalation process between client and contractor during building projects with an integrated contract in the Netherlands?

The main factors that influence the attitude and behaviour and the strategic choice are given in Table 12. In total, these main factors consist out of 28 different sub-factors that were identified in this research. Each of these factors can contribute towards either escalation or de-escalation.

Table 12: Main Escalation Factors

Attitude and Behaviour (Human Aspects)		Strategic Choice
Trust between the parties	Personal Interest	Stakeholder Interest
Involved Personalities	Competences	Project Interest
Continuity	Atmosphere	Past Performance
Personal Circumstances	Personal Conflict Approach	Contract Terms and Procedures

The factors lead to three types of conflicts, namely the interest, attitude and behavioural, and dysfunctional conflicts.

- Interest conflicts are caused by a divergence of interests between the client, contractor and involved stakeholders. Influenced by the impact and responsibility of the cause of the disagreement, the past performance during the contract phase and current disagreement and the contract terms and procedures.
- Attitude and behavioural conflicts are caused by the attitude and behaviour of those involved, which is influenced by the human aspects together with the contract terms and procedures and the past performance.
- Dysfunctional conflicts take place when both the attitude and behavioural, and interest conflicts occur. To solve this conflict, first the human aspect needs to be handled, before the interests and actual content of the issue can be dealt with.

Sub-question 3: Which conflict management style(s) should be used to prevent conflict escalation?

A hypothesis regarding conflict management was formulated with the aim of answering this sub-question. The hypothesis being: *“The use of the imposing and avoiding conflict management style will always lead to escalation, while the problem solving, conceding, and compromising styles will prevent the escalation of a conflict.”*

This hypothesis was partly accepted. While the imposing style leads to conflict escalation, and the compromising, conceding and problem-solving styles do not, it depends on the style used by the other party as well. Only when both parties choose for a non-avoiding and cooperative style the escalation will be prevented. The avoiding style should be avoided as the potential cause for the conflict can worsen without parties being aware of it, furthermore it can (unknowingly) influence the decision making of parties in other situations

Sub-question 4: What is the area of influence of contract management as practiced by the client during the contract life cycle?

Contract Management serves to ensure that within the contract scope all parties in the contract meet their obligations and achieve value for money, or try to improve on what has been agreed on. As result of successful contract management, the contract will be without disputes, value for money will be achieved, and there will be a good relation between the parties.

Contract Management is limited to the scope of the contract in the contract phase, and is related to all contract related activities, which includes all the interactions with the other parties. In the field of contract management different persons are involved at the different stages of the contract cycle, and it is thus not only applied by the contract manager. Contract management is involved during the entire project lifecycle, starting in the pre-contract phase during the market orientation till the moment the contract has finished

The role of contract management is two-fold in relation to conflicts. The field has to contribute to creating the conditions to ensure that disagreements will not escalate, and if it starts to escalate, to ensure that it will not any further. Even if a conflict escalates, it needs to be ensured that this happens at a constructive manner, to prevent long lasting damage to the relation between the parties.

Sub-question 5: Which potential interventions for the identified factors can be used during the pre-contract and design & build phase of a project with an integrated contract?

A hypothesis was formulated regarding the interaction that needs to be presented that allows for the choice of a non-escalating conflict management style. The hypothesis being: *“To prevent conflict escalation, the conditions should be created so that parties are willing to approach a conflict by means of cooperative interaction, resulting in the use of a non-escalating conflict management style.”*

This hypothesis was partly accepted. While in principle this interaction results in the choice for a non-escalating style, the divergent interests of the parties can be so significant that a disagreement will escalate nonetheless. However, cooperative interaction reduces the chance that disagreements will escalate, and makes it possible that situations are resolved to mutual satisfaction. When there is cooperative interaction between the parties, there will not be any dysfunctional conflicts and parties will be willing to manage the interest driven escalation.

Based on the research the definition for cooperative interaction was redefined to: *“Cooperative interaction is working towards a common goal while considering each other’s interests and objectives, by thinking along with the other party and facilitating their (problem solution) process, without taking the other’s responsibility.”*

To be able to achieve this kind of interaction, thirteen main interventions were formulated based on the theoretical and practical interventions found during the research. These interventions will create the conditions required for cooperative interaction and reduce the chance that conflicts will escalate due to divergent interests of the involved parties. The interventions being to:

- Work to avoid friction on a personal level between the involved individuals, signal, and deal with it as soon as possible.
- Have the right (mixture of) people in both teams
- Create a "we together" and not "we vs them" culture.
- Create trust between the parties.
- Have contract terms that are considered fair.
- Ensure there is continuity in the project teams.
- Consider the long terms effects of actions.
- Keep issues small with a limited impact on interests and objectives of both parties by agreeing on the content of the issue, and noticing and dealing with issues in an early stage.
- Act in the spirit of the contract.
- Objectively look at who is responsible.
- Awareness of the objectives and interests of the other party.
- Ensure that client and governmental stakeholders follow the same line.
- Make clear agreements with your own team and the contractor on how disagreements and conflicts will be managed.

In total, there are 78 practical interventions that are related to these main interventions, and these can be applied depending on the context of the project.

Sub-Question 6: Which interventions contribute to preventing conflict escalation during the design and build phase of a project with an integrated contract?

All the previously stated interventions are considered to contribute to preventing the escalation of disagreements and conflicts, and reducing their negative effects. Although there is disagreement on some practical interventions about how far parties should go with the effort in intervening in the escalation process.

Furthermore, there are limitations regarding the conditions of the contract. The interventions should not lead to alternative procedures and terms which coexist beside or even contradict the contract terms and this will need to be considered when using the practical interventions.

8.1.2 Main Question of the Research

The answers on the sub-questions lead to the answer on the main-question: *“Which interventions within the area of influence of Contract management for the factor that influence the decision making of client and contractor reduce the negative impact of the escalation of disagreements and conflicts?”*

Cooperative interaction should be created to reduce the negative impact of the escalation of disagreements and conflicts. The thirteen main interventions, as given in sub-question 5, will lead to the creation of this interaction between the parties. All interventions are within the area of influence of contract management, besides the continuity and composition of the project team for which it is limited to the own team.

A combination of the practical interventions can be chosen to bring the main intervention in practice, depending on the project and team context. Not for all projects the effort required for the interventions might be worth it, and some interventions would achieve the same goal.

It is still possible that disagreements and conflicts will escalate despite these interventions due to the divergent interests of the client, contractor, and stakeholders. However, cooperative interaction leads to these interests being discussed, and that the issue can be escalated in mutual consent allowing a third party or someone higher in the organisation to solve it. This will reduce the transactional cost and the harm done to the relation between the parties.

8.2 Recommendations

There are a couple of general recommendations for those that are involved in conflict situations. Prevention of the escalation of conflicts and disagreements is a continuous process, which should be started in the pre-contract phase and last till the contract end. In all steps of the project this mindset should be present.

When considering the use of interventions, make sure that these are supported by all those involved (when relevant). If an intervention is forced upon the other party, it can miss the intended effect and even work counterproductive.

It is important to share experiences about conflict(escalation) and what interventions have contributed to mitigating their effects. From the survey, it became clear that people have different opinions about what the impact is of the different escalating factors, which could translate to how much attention they pay in their projects to handling this factor. If someone does not have experienced a certain factor, he/she might not take it into account until it is too late.

Creating awareness about what causes conflict (escalation), while not explicitly listed in this research, could be of great value during projects. Simply being aware of what could play a role allows a better understanding of what is going on, and to what extra attention should be paid.

Furthermore, developing a standard approach for all projects on how to prevent and deal with the escalation would be useful. The impression the researcher got that it depends on who is in the project teams as to which measures are taken.

8.3 Limitations

It was concluded that the field of contract management can be applied by more people than just the contract managers, while the interviews to determine what this entailed had the contract managers as target group. Although in this research also the project managers and technical managers have been questioned about what falls in the area of influence, is the field of contract management still in development at the Rijksvastgoedbedrijf, and in the different project teams the way this field is applied differs. Therefore, what falls within the area of influence of contract management could still change depending on the developments. Although the area of influence was determined based on interviews with contract managers of other companies and international literature.

In the survey, it was observed that it differs per person how the different escalation factors are perceived. The diverse experiences of the different interviewees and surveyed can have an impact on the results of this research.

The research on the escalation factors and interventions was done within the same company, while there are more clients active in the construction industry. Their views on what can be done about the escalation of disagreement and conflicts has not been included in the research, therefore, interventions that would be applicable might not have been considered.

In the research, only the client side of the escalation process has been discussed. While in the solution it has been stated that cooperative interaction needs to be created to prevent escalation, something for which both parties need to be willing. The view of the contracting party on what interventions will lead to this might differ.

The research is based on the experiences of the interviewed and they express what is important to them. This could give a subjective view of the topic, although the escalating factors have been tested by a larger group, this was not possible for the interventions.

8.4 Further Research

The different interventions have been listed individually in this research. The next step should be to combine the different interventions in concrete steps and formulating a project long approach as to how the escalation should be managed. As the interventions on their own will not work, only in combination with one another. However, this requires a comprehensive approach as to which interventions to use to achieve the required result. It will be a balance act between required effort and result, something which was not considered in this research.

Several interventions are closely related to the procurement of the project. Defining which products will indicate collaboration, and how to best select based on the collaborative aspects so that a contractor is selected who is willing to interact on a cooperative way requires further research.

In the interviews, several times the possibility for incentives was discussed. Although the interviewees agreed that it could influence the behaviour/actions of the contractor, it was not clear as to how to do it. The main worry was that it would encourage strategic behaviour and that in the end the incentives would have an adverse effect.

The escalating factors are related to each other, and handling one factor can influence the other. A closer study to the underlying relations between the factors could indicate which factors are critical. The increased understanding can lead to an improvement of the found interventions, and allow for new insights for new interventions.

The contractor side of the disagreements, conflicts and escalation should be researched as their opinion can differ from the client. Combining the insights of both sides will enhance the understanding of the escalation mechanisms, perception of the other party (how they think about the client), and which interventions would contribute.

Competences and personalities have an impact on the escalation process and it is important that the right competences and personalities are presented in the project teams. It should be studied which personality/competences profiles are required in the project teams (on both sides) which will mitigate the escalation.

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Appendix A:

Project Team Roles

In this appendix, a brief description of the IPM roles is given to further explain on the different project team responsibilities during a project with an integrated in relation to which contract management operates.

A.1. Integral Project Management

Integral Project Management (IPM), was implemented by Rijkswaterstaat as a method to manage integrated projects. The method is made with infrastructure projects in mind. The Rijksvastgoedbedrijf, who are involved in building projects also use the concept of those different roles during project with an integrated contract. However, due to different project characteristics (smaller project area), and a different internal organisation, the way they implement it has its differences F.1. Definition of CM).

There are five different roles that can be distinguished, this does not mean that all roles are filled by different persons. It can happen that one person has several roles, or that the responsibilities of one role are divided over the other project team members (Rijkswaterstaat, n.d.). No full description of the tasks will be given, only the important elements are highlighted to illustrate the roles.

A.2. Project/Process Management

Project management: aimed to meet the quality, budget, and schedule targets.
Project manager: responsible for achieving a good project result.

The project manager is responsible for creating and executing the project assignment conform the project plan. Furthermore, he is primarily responsible for reaching the required project within the pre-set requirements of time, budget, and quality based on the documents provided by the manager project control.

He is the initiator for the process start of scope changes, and serves as an intermediary between the internal client and project team, and is held accountable by the internal client for the performance of the project. He leads the project organisation/team, aimed to strengthen the collaboration between the team members, and enhancing the team feeling (Heeren, 2010; Rijkswaterstaat, n.d.).

A.3. Project Control

Project Control: aimed to manage the risks that can occur during a project.
Manager Project Control: responsible for the identification and management of the (potential) risks. Integral project control ensures the control on the aspect time, budget, and quality during the life cycle. The control is based on risk management, where the risks are coupled with the activities. Responsible for the processes when it is about the project wide management of the project on aspect time/planning, financial, quality, scope, information, and risk management. Moreover, he is responsible for the progress reports and the document management.

The activities within the project are justified based on those management processes. His role is both evaluative (primarily on the functioning of the system and the internal project processes) as supporting (Heeren, 2010; Rijkswaterstaat, n.d.).

A.4. Environment Management

Area management: to balance the relation between the environment and stakeholders during the project.

Area manager: responsible for the contact with the environment

Responsible for the legal acceptance by the stakeholders and the integration of the system in the physical environment. This environment is formed by all parties who have a stake in the project. The demands and agreements of the stakeholders are delivered to the technical management.

The environment manager is responsible for the interaction with the environment to realise the project within the public private legal conditions. To do so, he has to take care of the permits, agreements, and to create trust in the environment to create a collaboration with the environment parties. (Heeren, 2010; Rijkswaterstaat, n.d.)

Intensive contact and consultation is required on official and administrative level. He has an important signal function in the team to notice subject from the environment that can have in or external influence on the quality of the project. Due to the smaller project sites/areas in which building projects take place compared to infrastructure projects, the role of environment manager is often filled by the project manager (Appendix F: Interview Results Contract Management).

A.5. Technical Management

Technical management: to manage the risks from the organisation, project organisation and the client.

Technical manager: responsible for the technical and content input in the project

Focused on realising the required result for the client. To achieve this, he designs a system based on the demand of the client and sets the functional specifications that should lead to the realisation and use of the system. This is done based on systems engineering.

This is done in close collaboration with environment management (requests, demands and limitation of the environment) and contract management (translation to contract conditions). Furthermore, the technical manager is responsible for the technical input during the project, and to give input for the formulation of the system, process, and production tests during the realisation phase (SCB). (Heeren, 2010; Rijkswaterstaat, n.d.)

Appendix B:

Conflict Factors

The factors that play a role in the arising and escalation of conflicts are given in this appendix. The factors were found during a literature study to the sources of conflict during projects in the built environment. In the found studies no distinction was made between the type or size of the project or the kind of contract used. Furthermore, the studies have been conducted in a variety of countries, which might or might not make them applicable for this research.

As discussed in section 2.4, three main groups of factors can be defined, namely task, process and social. Each of those groups have their own place within the proposed conflict model. Due to this reason, and the fact that this research limited to integrated contracts, the found factors had to be recategorized. This was done based on the overlap of the factors, which was then refined during a work session with MV. In the following paragraphs for each group, the new categories including their containing factors are presented.

B.1. Task Factors

The task factors are related to the actual project work, and the related actions of either party during the design and build phase of an integrated contract. In Table 13, the task factors are presented, divided into several categories. Behind each factor the source is given where the factors were found.

Table 13: Task Factors

Quality; the delivered quality does not meet the requirements set for the design, construction, or maintenance.

Different construction technique used than set in the contract	(Acharya, Lee, & Im, 2006)
The work has errors or is defective	(Acharya, Lee, & Im, 2006; Kumaraswamy, 1997; Watts & Scrivener, 1993)
The specifications set in the contract are not met	(Acharya, Lee, & Im, 2006; Brooker, 2002; Conlin et al., 1996; Jones, 1994; Watts & Scrivener, 1993)
The quality of the used materials is under standard	(Watts & Scrivener, 1993)
Major defects in maintenance	(Acharya, Lee, & Im, 2006)
Contractor purposely works below the specified standard	(Cheung & Pang, 2013)
Notice to remedy defects	(Watts & Scrivener, 1993)
Errors and omission in design.	(Acharya, Lee, & Im, 2006; Jones, 1994; Kumaraswamy, 1997)
Change Orders; changes made to the project after the contract has been awarded resulting in disagreement about the planning or budget.	
Valuation of variations due to client changes (change of scope)	(Bristow & Vasilopoulos, 1995; Cheung & Pang, 2013; Heath et al., 1994; Hewitt, 1991; Kumaraswamy, 1997; Semple et al., 1994; Sykes & Sheridan, 1996; Watts & Scrivener, 1993; Yates et al., 2006)

Acceleration or suspension of works	(Acharya, Lee, & Im, 2006; Hewitt, 1991; Semple et al., 1994; Yiu & Cheung, 2006)
Client orders extra without granting justified extension of time	(Cheung & Pang, 2013)
Refusal of change order by contractor due to work not being covered by insurance	Work session MV
Disagreement about division of cost reduction due to change order	Work session MV
Information; the provided information does not match the actual situation on site.	
Unforeseen ground conditions	(Cheung & Pang, 2013; Kumaraswamy, 1997)
Change/differing of site condition	(Acharya, Lee, & Im, 2006; Acharya, Lee, & Kim, 2006; Hewitt, 1991; Watts & Scrivener, 1993)
Lack of space in construction site	(Acharya, Lee, & Im, 2006)
interferences with utility lines	(Kumaraswamy, 1997)
Unavailability of equipment that would be provided by client	Work session MV
Clients lack of information or decisiveness	(Acharya, Lee, & Im, 2006; Kumaraswamy, 1997)
Payment; disagreement about the value of the work done and payment method.	
Payment	(Brooker, 2002; Heath et al., 1994)
Delay in running bill payment	(Acharya, Lee, & Im, 2006)
Excessive quantity variations	(Acharya, Lee, & Im, 2006)
Valuation of final account	(Sykes & Sheridan, 1996)
Contractor purposely fails to notify the substantial difference in quantity between contract bills of quantity and actual quantity	(Cheung & Pang, 2013)
Contractor purposely fails to disclose the specification of the material use	(Cheung & Pang, 2013)
Contractor purposely does not provide invoice for the materials used	(Cheung & Pang, 2013)
Progress claims	(Watts & Scrivener, 1993)
Client rejects outright monetary claim submitted by the contractor	(Cheung & Pang, 2013)
validity of notice of practical completion	(Watts & Scrivener, 1993)
Delay due to the client; damages due to delays of the project caused by the (in)action of the client or third parties working for them.	
Late handover of construction site	(Acharya, Lee, & Im, 2006; Kumaraswamy, 1997; Semple et al., 1994; Yates et al., 2006)
Delayed design information / drawings	(Kumaraswamy, 1997; Yates et al., 2006)
Third party delays	(Acharya, Lee, & Im, 2006)
Architect fails to issue instruction within time	(Cheung & Pang, 2013)
Consultant fails to give information within due time	(Cheung & Pang, 2013)
Nominated subcontractor delays in work	(Cheung & Pang, 2013)
Nominated supplier delays in works	(Cheung & Pang, 2013)

Delay by other contractors employed by the client (e.g. utility companies)	(Yates et al., 2006)
Contractors employed directly by the client delays in work	(Cheung & Pang, 2013)
Third party damage to the project	Work Session MV
Delay due to the contractor; the contractor does not deliver the work according to schedule, requests for extension of time.	
Slow work of contractor, delays	(Acharya, Lee, & Im, 2006; Brooker, 2002; Conlin et al., 1996; Hewitt, 1991; Watts & Scrivener, 1993)
Client reject outright extension of time claim submitted by the contractor	(Cheung & Pang, 2013)
Extensions of time	(Heath et al., 1994)
<i>Uncontrollable external events; events that cannot be controlled by the project participants</i>	
External events	(Kumaraswamy, 1997)
Interruptions due to protests	Acharya, Acharya and Im, Hewit (1991)
Change in government codes	(Acharya, Lee, & Im, 2006; Cheung & Pang, 2013)
Shortages of resources	(Acharya, Lee, & Im, 2006; Cheung & Pang, 2013)
Labour disputes/union strikes	(Acharya, Lee, & Im, 2006; Cheung & Pang, 2013)
Adverse weather/acts of god	Acharya and Im, Semple et al. (1994), Cheun anatory, Yates
Market inflation	(Acharya, Lee, & Im, 2006; Cheung & Pang, 2013)

B.2. Process factors

The process factors are related to the conditions of the collaboration that are set during the pre-construction phase. This entails the contract documents and the actions and decisions made during the tender phase that give shape to the collaboration. The factors can lead to divergent views on the responsibilities and rights of the involved parties. While the task factors are related to the actual situation of the work, the process factors are related to how the project was envisioned before the work started. In Table 14 the process factors are presented, divided into several categories. Behind each factor the source is given where the factors were found.

Table 14: Process factors

Tender phase; actions and decisions in the tender phase that shape the collaboration between the parties

Unrealistic tender pricing (too low price for the expected work)	(Kumaraswamy, 1997)
Inappropriate contract type	(Kumaraswamy, 1997)
Estimating errors	(Kumaraswamy, 1997)
Inappropriate contract form	(Kumaraswamy, 1997)
Inappropriate contractor selection	(Kumaraswamy, 1997)
Incompetent contractor, negligence	(Acharya, Lee, & Im, 2006; Brooker, 2002; Colin, Lanford, & Kennedy, 1996)
Incomplete tender information	(Kumaraswamy, 1997)
Inaccurate design information	(Kumaraswamy, 1997)

inadequate design documentation	(Kumaraswamy, 1997)
Contractor purposely fails to notify omission of items in the contract bills of quantity	(Cheung & Pang, 2013)
Contract Document; <i>the contract sets the conditions for the collaboration between the parties</i>	
Ambiguities in contract documents	(Acharya, Lee, & Kim, 2006; Bristow & Vasilopoulos, 1995; Kumaraswamy, 1997; Spittler & Jentzen, 1992; Yates et al., 2006)
Contract terms/specification is unclear	(Cheung & Pang, 2013; Heath et al., 1994)
Project scope definitions not clear	(Acharya, Lee, & Im, 2006; Cheung & Pang, 2013)
The drawings provide insufficient details	(Cheung & Pang, 2013)
Confusing requirements of owner	(Acharya, Lee, & Im, 2006)
Inadequate contract documentation	(Kumaraswamy, 1997)
Inadequate brief	(Kumaraswamy, 1997)
Change order evaluation method	(Acharya, Lee, & Im, 2006; Cheung & Pang, 2013)
Inappropriate payment modalities	(Kumaraswamy, 1997)
Disproportionate fines	Worksession MV
Inconsistency	(Cheung & Pang, 2013)
The quantity of the same items in the contract bills are substantially different to the actual quantity	(Cheung & Pang, 2013)
Some items are missing from the contract bill	(Cheung & Pang, 2013)
The drawings contradict with the specification	(Cheung & Pang, 2013)
The details in the drawings are inconsistent	(Cheung & Pang, 2013)
The drawings are inconsistent with the contract bills	(Cheung & Pang, 2013)
Unfair Risk Allocation	(Acharya, Lee, & Im, 2006; Kumaraswamy, 1997)
Unclear Risk allocation	(Kumaraswamy, 1997)
Unrealistic expectations time/cost/quality	(Jones, 1994; Kumaraswamy, 1997)
Contract documents in general	(Jones, 1994; Mitkus & Mitkus, 2014; Mitropoulos & Howell, 2001)
Not clearly stipulated contract conditions regarding the respective rights, benefits and responsibilities had caused disputes	(Cheung et al., 2009)
Overly detailed contractual procedures to deal with contingencies had caused disputes	(Cheung et al., 2009)
There were many ambiguous terms in the Conditions of Contract used	(Cheung et al., 2009)

B.3. Social Factors

The social factors influence how the involved parties approach the conflict that is taking place, and whether it will lead to an escalation of a functional to a dysfunctional conflict. It includes a wide variety of factors, for example the different interests of the involved parties, the past performance, or competences of the involved individuals. In Table 15, the social factors are presented, divided into several categories. Behind each factor the source is given where the factors were found.

Table 15: Social Factors

Interest; due to several reasons, the interests of the project participants can differ from each other

Having fair expectations of future profits and rewards would make your project team more likely to gain an advantage over the other parties	(Cheung et al., 2009)
Perception to aggressive actions of competitor/ other contracting parties would more likely make your project team to oppose	(Cheung et al., 2009)
Dealing with the issues that can increase profitability would increase the competitive pressure of your project team	(Cheung et al., 2009)
Your project team would become more active to deal with the issues that can benefit to achieve your goal	(Cheung et al., 2009)
Motivation (reward structure): Whether the individuals of the organisation are motivated to avoid or resolve disputes	(Diekmann & Girard, 1995)
Tendering pressures	(Jones, 1994)
Economics	(Jones, 1994)
Contractors' financial position	(Mitropoulos & Howell, 2001)
Vested interests	(Kumaraswamy, 1997)
Dissimilar perceptions of fairness by the participants	(Spittler & Jentzen, 1992)
The capital necessary for the project operation had been in general insufficient	(Cheung et al., 2009)
Cost of conflict	(Mitropoulos & Howell, 2001)
Expectations of Further Work: The expectation of further work can influence the way people deal with the disputes	(Diekmann & Girard, 1995)
Personal interests of the involved individuals	Work session MV
Goals of the organisations	Work session MV
Requirements of external stakeholders	Work session MV
Power Balance: Situations occurs in which a stronger company (financially, experientially, technically) may have the advantage when it comes time to settle disputes. This tends to alienate one or more parties and does not help to solve disagreements.	(Diekmann & Girard, 1995)
Lack of team spirit due to divergent interests	(Bristow & Vasilopoulos, 1995)
Low interdependency between the project participants had led to your party more likely taking advantage over the others	(Cheung et al., 2009)
Attitude; the mindset of the individual project participants	
Competitive/ adversarial attitude	Spittler and Jentzen (1992), Kumaraswamy Rhys Jones (1994) Mitropoulos and Howell (2001)
Personality clashes	(Kumaraswamy, 1997)
Psychological distress such as fear, sadness, anger, and guild are displayed by member(s) of the project team	(Cheung & Pang, 2013)

Emotions such as dominance, assertion, bullying, and forcefulness are displayed by member(s) of the project team	(Cheung & Pang, 2013)
Intellectually curious, behaviourally flexible, and liberal in their attitudes and values are qualities displayed by member(s) of the project team	(Cheung & Pang, 2013)
Hostility, callousness, and cynicism are manifested by member(s) of the project team	(Cheung & Pang, 2013)
Certain members of the project team find it difficult to relax	(Cheung & Pang, 2013)
Certain members of the project team are nervous	(Cheung & Pang, 2013)
Certain members of the project team are upset or agitated	(Cheung & Pang, 2013)
Certain members of the project team are irritable or overreactive	(Cheung & Pang, 2013)
Certain members of the project team are impatient	(Cheung & Pang, 2013)
Negligence or negative attitudes of project participants	(Mitkus & Mitkus, 2014)
The actions being taken by competitors/ other contracting parties were strongly aggressive	(Cheung et al., 2009)
Competences; the qualification of the project participants	
Management	Rhys Jones (1994), Mitkus
Lack of competence of project participants	(Kumaraswamy, 1997)
Lack of professionalism of project participants	(Kumaraswamy, 1997)
Lack of or poor communication	(Acharya, Lee, & Kim, 2006; Bristow & Vasilopoulos, 1995; Jones, 1994; Kumaraswamy, 1997; Mitkus & Mitkus, 2014)
The individuals do not have good interpersonal Skills	(Diekmann & Girard, 1995)
The experience/competence of the individuals directly responsible for the management of the actual construction.	(Diekmann & Girard, 1995)
The organisation's level of experience with type of project undertaken. It does not deal with individuals, but with the organisation.	(Diekmann & Girard, 1995)
Capable management: This considers the respective organisation, owner or contractor, and the skill and ability of the upper management.	(Diekmann & Girard, 1995)
Past Performance; experiences of the past, whether related to situations in during the ongoing project or previous projects	
Success of Past Projects: If the organisation is considered "successful" and "reputable" with previous projects. Success can be measured by any combinations of schedules, budget, quality, minimal disputes, and so on.	(Diekmann & Girard, 1995)
The quality of past dealing(s) between project participants was poor (low degree of satisfaction of previous cooperation)	(Cheung et al., 2009)
The previous dealing(s) were unsuccessful in achieving the goals of the project(s)	(Cheung et al., 2009)
The unfavourable past cooperation between project participants had caused disputes	(Cheung et al., 2009)
Team Building: Existing effort of the organisations to use a team approach (example: partnering)	(Diekmann & Girard, 1995)
History Together: The historic working relationship of the two organisations and how it can affect the current project.	(Diekmann & Girard, 1995)

Appendix C:

Interview Protocol

Contract Management

In this appendix, the interview protocol for the shared interviews about contract management is described

C.1. Purpose of the Interview

The purpose of the interview is to determine the area of influence of contract management. As this interview is done in collaboration with several other students the results and questions will cover a wider range of topics.

C.2. Analysis

The results of the interview will need to be coded so that only the elements that are relevant for this research are considering. These elements will have to do with the project phases contract management is involved in, and the different responsibilities/influence the field has. Furthermore, interventions related to conflicts, or conflict factors that are mentioned by the interviewees will be coded so they can be used in other research steps.

C.3. Interview Question

Date:

Location:

Interviewee:

Interviewers:

Introduction with explanation for the interview and other students

Dear Sir/Madame,

This interview is presented to you by a group of students from Delft University of Technology, who are conducting a research as a final step of their master award of Construction management and engineering. The questionnaire is a collaborative attempt at collecting more data regarding the general concept of contract management in infrastructure and building environment, and thus to contribute to the body of knowledge regarding this field. The information gathered from your practical experience as contract/project managers is very important in making our research a success and it will be used solely for study purposes and not otherwise.

Graduate Students:

Georgi Vachev

Lisette van Wijngaarden

Marcos Solis

Polina Veleva

Wouter Eitjes

In this interview, the focus is on the realisation phase. We would like to ask you to answer all questions with this in mind. However, if you can find links within different phases, please elaborate on this.

Broad, general, starting point, practice to

- Background
- Client/ Contractor/ Consultant
 - Educational background
 - How many years of experience? Career path (working experience only in public sector or private as well?)
 - What kind of contracts?

Innovative contracts, DBFM? DBFO

Infrastructure/ Building

Best Value Procurement, Performance measurement

General questions on contract management

This set of questions will be general questions on contract management: how it is viewed by the contract manager and what the tasks and responsibilities are.

1. What is contract management to you?
2. What do you think is the main purpose/goal of contract management?
3. How does contract management change when the parameters of projects change?
Parameter: complexity, type of contract, level of risk, repetitive or new projects

4. Which competences of a contract manager are important in the realisation phase? (what exactly he/she thinks his position of a contract manager is)
5. What are the main responsibilities for a contract manager?
6. What are the main difficulties for the contract manager?

What is your first answer?

Do you concur that the main difficulties are:

- *(what role do you see for the contract manager in)*
 - *Translating the client's objectives/goals/wishes into contract terms*
 - *Dealing with stakeholders*
 - *Change management*
 - *Conflict resolution*
- 7. What is unique for contract management in the built environment (construction industry)?
- 8. How does contract management relate to project management?
- 9. Can you tell us how the other phases (planning/tender) of the contract management lifecycle impact the realisation (construction/operation/maintenance) phase?

Performance measurement

This part aims at investigating the general concept and drivers for performance measurement as a first step for further elaboration on the topic. First, it will try to get an overall idea of what project success means to different stakeholders and what are the most important criteria they use to measure it.

Q methodology explanation:

A methodology of studying subjectivity by ranking a number of elements.

A distinction between success factors and success criteria should be made and explained.

- Success criteria are: the set of principles, standards or measures used to judge the success or failure of a project” (Korbijn, 2014, p.9)
- While the success factors are: “the set of circumstances, facts, or elements which, when influenced, increase the likelihood of success” (Korbijn, 2014, p.9).

This interview will focus on success criteria.

10. Having in mind the projects who have been involved, what do you think is the most important in measuring your project success?

Additional questions should be asked

- *about the first 3 criteria ranked with most important and least important role*
 - *why the neutral criteria are ranked as neutral*
 - *how do you think you can influence those criteria (in which project phase? which are the other stakeholders influencing it)*
 - *do you have any criteria missing from the list?*
11. What are the current processes/ strategies to use performance measurement in your organization?
 12. Does performance measurement have an added value for the project success or for your organization? (define your main drivers for measuring the performance of the contractors or your own organization)
 13. In what way does the information you received from the measured performance during the execution of the project (and on its final submission) support your decision-making process on a daily basis and help you steer the project towards a certain direction?
 14. What are the difficulties of measuring performance?
 15. Who should be involved in the development of performance measurement? Do you think contractors should be engaged in the development of performance measures, as they will oversee their own work? Engaged means they do it themselves, or be part of it?

Relation and Experiences

As contract manager, you are dealing with the different parties of the contract.

16. What do they want to achieve with collaboration, what is the outcome?
17. How do you ensure/support/create collaboration in contract management? (trust) Do you have the tools for this?
18. Do the other parties also share an interest in collaboration?
19. Have you experienced changes in the scope of a contract? Can you tell us some experience?
20. In managing a conflict, what are the most important drivers for decision making?
21. What can be currently improved in management of contracts?
22. What would you like to change about the way contract management is performed at this moment? (swot)

Closing of interview

Thank the interviewee for the participation

23. Do you have any final remarks regarding this interview? Something else need to be add on your behalf/perspective?
24. At a later stage, would you be willing to participate in an additional survey/interview?

C.4. Basic Terms

1. **Contract management**

- Contract management is the process in which full compliance of the obligations of all parties in an agreement is ensured, in order to meet the operational objectives of the contract (Bos, 2014)
- The purpose of the contract management framework is to provide a clear and standardised approach to managing and administering contracts for goods and services purchased from suppliers. The main objective of contract management is to ensure commitments and obligations from buyers and suppliers are effectively met, by delivering value for money outcomes and managing inherent risk. Contract management is the key step to manage the contract in order to successfully deliver the goods/services at the agreed level and costs, to the agreed timeframe, with minimal risks. (Elsay, 2007)

2. **Complexity**

- It is proposed that project complexity be defined as 'consisting of many varied interrelated parts' and can be operationalized in terms of differentiation and interdependency. (Baccarini, 1996)

"In terms of organizational complexity, "differentiation" would mean the number of hierarchical levels, number of formal organizational units, division of tasks, number of specializations etc.; "interdependency" would be the degree of operational interdependencies between organizational elements.

(ii) In terms of technological complexity, "differentiation" would mean the number and diversity of inputs, outputs, tasks or specialities; "interdependency" would be the interdependencies between tasks, teams, technologies or inputs." (Baccarini, 1996, p. 269)

- Complexity relates to the degree of interaction of all the elements that comprise P3 management and is dependent on such factors as the level of risk, range of stakeholders and degree of innovation (APM, 2006).

3. **Uncertainty**

- Project complexity is often considered as being caused by uncertainties. (Perminova, Gustafsson, & Wikstrom, 2008)introduced a new perspective on uncertainties in projects and how to manage uncertainties in projects (2008). She gives an explanation about the link between uncertainties and risk management. Whereas traditional risk management scholars assumed risk is uncertainty, (Perminova et al.) rather understands risk as one of the implications of uncertainty. She defined uncertainty as "a context for risks as events having a negative impact on the project's outcomes, or opportunities as events that have beneficial impact on project performance" (Perminova et al., 2008, p. 76)

4. Realization phase

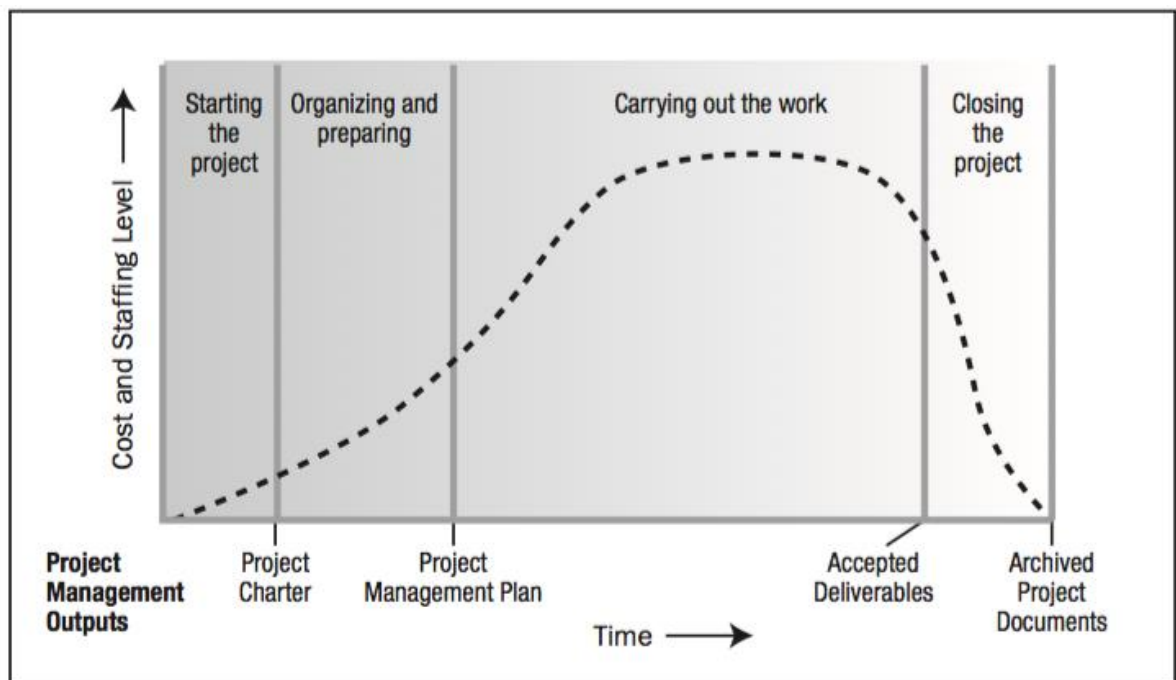


Figure 2-1. Typical Cost and Staffing Levels Across the Project Life Cycle

5. Contract management life cycle

- The process of systematically and efficiently managing contract creation, execution and analysis for maximising operational and financial performance and minimising risk (Elsay, 2007)

6. Change management

- Change management is a structured approach to moving an organisation from the current state to the desired future state (APM, 2006).

7. Conflict resolution/management

8. Stakeholder management

- Stakeholder management is the systematic identification, analysis, planning and implementation of actions designed to engage with stakeholders. It is a set of techniques that harnesses the positive influences and minimises the effect of the negative influences. It comprises four main steps: (1) Identify stakeholders, (2) assess their interest and influence, (3) develop communication management plans, (4) engage and influence stakeholders. Identifying stakeholders will be done using research, interviews, brainstorming, checklists, lessons learned and so on. The stakeholders and their areas of interest are usually shown in a table known as a stakeholder map. Typical types of stakeholders will include: (1) individuals and groups performing the work, (2) individuals and groups affected by the work, (3) owners, shareholders and customers, (4) statutory and regulatory bodies (APM, 2006).

9. Risk management

- Risk management is a process that allows individual risk events and overall risk to be understood and managed proactively, optimising success by minimising threats and maximising opportunities (APM, 2006).

10. IPM

- Integrated Project Management model, which are implemented in the organization with five key roles, each with its own discipline and often conflicting interests. The five key roles are (1) project management, (2) project control, (3) stakeholder management, (4) technical management, (5) contract management (Rijkswaterstaat, n.d.)

11. Performance measurement

- “Performance measurement is the process of quantifying the efficiency and effectiveness of an action.” Where the terms effectiveness refers to “the extent to which customer requirements are met”, while efficiency measure “how economically the firm’s resources are utilized when providing a given level of customer satisfaction” (Neely, Gregory, & Platts, 1995)

Performance measurement is generally defined as regular measurement of outcomes and results, which generates reliable data on the effectiveness and efficiency of programs.

https://eca.state.gov/files/bureau/performance_measurement_definitions.pdf

12. System based contract (SBC)

- [-https://www.rijkswaterstaat.nl/zakelijk/zakendoen-met-rijkswaterstaat/werkwijzen/werkwijze-in-gww/systeemgerichte-contractbeheersing.aspx](https://www.rijkswaterstaat.nl/zakelijk/zakendoen-met-rijkswaterstaat/werkwijzen/werkwijze-in-gww/systeemgerichte-contractbeheersing.aspx)

1. Project success

- The common assessment of the success of construction projects is: delivered on time, to budget, to technical specification and meet client satisfaction (Morris & Hough, 1987; Pinto & Slevin). However, today it is considered that the criteria for success are in fact much wider, incorporating the performance of the stakeholders, evaluating their contributions and understanding their expectations (Atkinson, 1999).

2. Project success factors

- “the set of circumstances, facts, or elements which, when influenced, increase the likelihood of success” (Korbijn, 2014, p. 9)

3. Project success criteria

- "the set of principles, standards or measures used to judge the success or failure of a project” (Korbijn, 2014, p. 9)

Appendix D:

Interview Protocol

Conflict Escalation

D.1. Purpose of the Interview

The purpose of the interview is to add to the found literature, and tests the hypothesis on the following subjects:

- The conflict escalation model
- The causes of escalation
- Area of influences (which project team roles are involved in the conflict process)
- Conflict Management (how to you deal with the factors that cause escalation, what is currently done and what should be done)

Due to the limited time per interview, the focus is on the first three points. The conflict management part is discussed when there is available time. After this set of interviews, it should be clear what factors contribute to the escalation of a conflict, and if certain project team roles have set a task in conflict management. Furthermore, pointers for the next set of interviews on conflict management will be obtained.

D.2. Interviewees:

As the different project team roles could have different perspective on the topic, depending on their role and background. Eight professionals will be interviewed, two projects, two technical and three contract managers, each of them having participated in at least several projects. Furthermore, one expert (mediator/former judge) is also interviewed to provide a better understanding of the process.

D.3. Interview Questions:

It will be a semi structured interview. Questions are prepared and depending on the answers of the interviewee additional questions can be asked to further explore the answers. This will allow to gain a broader perspective of the subject.

The first part will be about the relations in the conflict escalation model and the factors that cause escalation of conflicts. The second part is about the role division of the project team members regarding conflict management, and how to prevent conflict escalation (conflict management). As the causes of escalation, and how to manage them are closely related, the subjects will likely go back and forth. The focus of the interview will be on the earlier mentioned points though.

Assumptions/Hypotheses

The following hypotheses need to be validated, these are the underlying assumptions of the conflict model, as described section 2.6 Proposed Conflict Model, the conflict management styles in section 2.7 Management and interaction paragraph 2.7.2 Interaction :

- A distinction can be made between functional and dysfunctional conflicts
- Task Factors, description, and definition
- Process Factors, description, and definition
- Social Factors, description, and definition
- Functional conflicts only arise due to a combination of task and process factors
- The actions/approach of the conflict is directly influenced by the social factors
- The process factor group does not directly influence the approach/actions, and the process factor group influences the social factors
- The task factors have no (in)direct influence on the escalation of conflicts
- Past Performance influences the social factor group
- The choice of conflict management style is influenced by the social factors.
- The use of the imposing conflict management style will always lead to escalation, while the problem solving, conceding, and compromising styles will prevent the escalation of a conflict.
- To prevent conflict escalation, the conditions should be created so that parties are willing to approach a conflict by means of cooperative interaction, resulting in the use of a non-escalating conflict management style.

Starting questions

Depending on the answers of the interviewee, follow up questions can be asked. The questions about the different factors follow from the literature, as identified in 2.6 Proposed Conflict Model, the conflict management styles in section 2.7 Conflict Management and 2.7.2 Interaction. Furthermore, the topic of contract management and interventions will be discussed when there is available time.

1. What do you consider a conflict?
 - a. What is the reason(s) that a conflict escalates?
 - b. Does it depend on how the parties approach the conflict?
 - c. What approach causes the escalation (the 5 styles)?
 - d. What styles should be used to prevent escalation?
1. What are the different factors that influence the approach?
 - a. Process factors (attitude and interests)
 - b. Social factors (tender phase, contract terms/documents)
 - c. Task factors (cause/risk/responsibility)
 - d. Which of the mentioned factors have the greatest influence on the choice for conflict management style?
2. How is the division between tasks of the different team roles arranged regarding conflict management?
 - a. Has the RVB a pre-set role division or is it project dependent?
 - b. What is the mandate of the different roles?
 - c. Is there a conflict management system?
3. Of the earlier mentioned reason/factors for escalation, how could you prevent that?
 - a. How do you see the role of the CM in that?

The different definitions as presented in the report will be explained when required. Furthermore, power point sheets with the model can be used to further explain the model and the underlying relations if things are unclear.

D.4. Analysis

The answers of the interviewees will validate or reject the made hypotheses/assumptions, leading to changes to the conflict model and direction for the next research steps about the interventions. The conflict factors that are mentioned will be coded, and commonalities between the factors analysed.

Not all factors found in the literature are thought to contribute to the escalation process, mainly those related to the task and process categories. Moreover, some of the social factors cannot have an influence or are described differently by the interviewees. There can also be an overlap between the different factors and this will need to be cleaned up as much as possible.

The new factors mentioned during the interviews will be questioned during interviews that follow as to immediately validate the factors to allow a conclusion to be drawn if it is only one person mentioning it, or that it is a shared opinion. Based on the insight of the researcher, a list of factors will be drafted, consisting out of main factors and sub factors that make up the main factor.

The underlying relations between the different sub-factors of different main factors will not be further studied, other than the grouping those closely related together as much as possible without having it lead to a loss of information. It is expected that it will take several iterations before a final draft list can be made, which will have to be validated later in the research.

Appendix E:

Case Study Protocol Interventions

In this appendix, the case study protocol is explained. The case studies are done to find the interventions that are/were applied during the projects to prevent escalation. The combined findings will give insight in which interventions can successfully be applied.

E.1. Background

In the previous stage of the research, during the literature study and interviews, several factors have been identified that influence the escalation process. Interventions will need to be found that will influence these factors, to ensure that cooperative interaction takes place between the parties. The case studies will help answer the following two sub-questions:

- What interventions for the identified factors, can be taken during the contract phase, that will support the appropriate interaction between the parties that will prevent conflict escalation?
- Which interventions for the identified factors, can be taken during the pre-contract phase, that will contribute to creating the appropriate conditions for the identified interaction?

E.2. Design

In a case study a relatively small amount of, in this case, projects are studied. The consequences of this is that a quantitative analysis of the data is not possible. A comparative case study will be done with the hierarchic method. The cases need to be studied independently from each other, per an established pattern.

During each project, interventions, which is an action or process of intervening are taken to contribute to the different aspects of the project. Several of these aspects are related to the escalation process and have been found earlier. Finding out which interventions have been used, during the different projects, will provide an overview of the possibilities.

The reason several case studies are chosen is because of the different approach each project can use. There is no set approach by the RVB, and each project has different project team members with a different view on how to approach a project, although the outcome might be the same (few conflicts) or not. Looking at the similarities and differences between the interventions applied, and the project outcome, will provide insight in which ones should be applied.

E.3. Data Collection

Interventions used for each of the identified factors need to be found. It can be the case that no intervention was used for a certain factor.

The data is collected by means of face-to-face interviews, consisting of open questions or topics. Of each project, two persons of the management team (IPV-er, project and/or contract management) will be interviewed to gain their insight in the matter. Due to the reason that there is no clear separation between the tasks of the project and contract manager, both can do tasks related to the field of contract management. Therefore, not specifically the contract manager has to be interviewed to gain insight in the interventions related to the field of contract management. Before the interview

is conducted, the list of factors will be sent to the participants to allow themselves to better prepare for the interview. The interview itself will last between the 60-90 minutes. The interview questions are listed later in this section.

Furthermore, document research can also be used to acquire more depth. For each case, the end evaluations, and the documents related to interventions will be studied if accessible/available. Since some projects have recently finished, or are still ongoing, not all materials might be available. Based on the answers on the interview questions, extra information can be asked about the topics/interventions mentioned. This should give more insight in how the interventions are shaped, or which interventions have been used, or should have been used. The documents sought after are the evaluation reports, or the documents related to collaboration/conflict management.

E.4. Case Selection:

There needs to be a strategic selection of cases rather than a random sample due to the limited number of cases studied. The principle of chance as used by a survey is replaced using a set of research questions that has to be dealt with.

Contract Management is applied during integrated contracts, starting in the pre-contract phase till the contract is finished, meaning that the interventions can take place during those phases. As mentioned before a strategic sample of projects need to be chosen, based on the similarities and dissimilarities between the cases. First the required similarities will be discussed.

- The research is done for the client side of a project and is limited to building projects. Therefore, only projects conducted by the Rijksvastgoedbedrijf will be selected.
- In the projects, the field of contract management will need to be recognized to be sure that the interventions mentioned are related to that field. Therefore, traditional contracts will not be studied as the field is not specifically applied there.
- As the conflicts that take place during the design and build phase are considered, the project will either need to be in that phase, or having just finished with it, so that the memory of those that are interviewed is fresh.
- For the projects that are currently ongoing, it is important that they have progressed sufficiently to be sure that something can be said about the result or lack of result of the used interventions.

Among others, the projects meeting these criteria can be found in **Table 16**.

Table 16: Case Study Projects

Project Name	Contract Type	Start	Completion	Current Phase
Rijkskantoor De Knoop	DBFMO	2015	Early 2018	Build
PI Zaanstad	DBFMO	2013	End 2016	Exploitation
Court Breda	DBFMO	2015	2018	Build
Temporary Court Amsterdam	DBMR		End 2016	Maintenance

The projects can be categorised based on two more criteria that indicate the dissimilarities between them. In Figure 26, the projects are divided on the amount of conflicts that have taken place, and if in the EMVI criteria collaboration has been included as a criterion. The projects, De Knoop and Temporarily Court Amsterdam, have been nominated internally by the RVB for projects with the best collaboration.

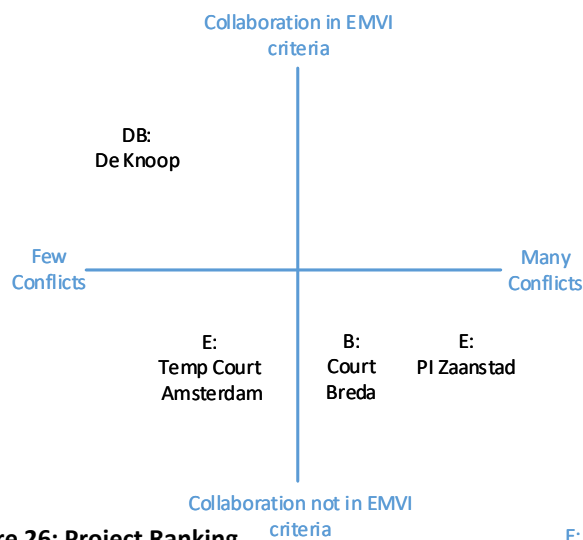


Figure 26: Project Ranking

E: Exploitatie
DB: Design & Build

Selecting these cases will allow to conclude if for conflict prevention certain criteria should be included in the EMVI, and if that is not done, what other interventions there are to prevent conflict escalation. Furthermore, by including PI Zaanstad, the interventions taken there, compared to those of the projects with few conflicts can shed light on what interventions are effective and which ones are not.

E.5. Interview Questions

There interview will be semi-structured, consisting of open questions regarding the interventions for the identified factors, within the area of influence of the field of contract management, to ensure cooperative interaction. The reason for a semi-structured interview is that answer might sometimes related to different factors, and by means of follow up questions, more depth can be gained. Furthermore, the perception of the different interviewees can differ from the interviewer, and will need to be considered during the interview.

The questions are based on the factors identified in 3.4.2 Conflict Escalation Factors, and the sub-factors can provide the basis for follow up questions/context. And findings during the previous interview sessions on conflict factors/contract management.

The topic and context of the interview will first be explained before the questions are asked. This will provide the required background to understand the questions.

Starting question:

1. What are the roles used in the project/is SCB used?

There are sometimes differences between the project team set-up in project of the RVB, and not always SCB is used. This can be of impact on the differences between the cases.

2. What does collaboration entail for you?

Collaboration has been named before in interviews to prevent escalation, however, there tend to be different opinions of what it entails. Thus, if the interviewee talks about collaboration later in the interview, the meaning of the word is clear, which might also shed led on differences between cases.

3. What do conflicts entail for you?

As this research is about preventing the escalation of a disagreement towards a conflict, it is important to understand at which stage someone considers it a conflict, and not any longer a disagreement. This also helps to set the context of the remaining questions.

4. Does a good collaboration result in fewer conflicts?

5. Can there be a good collaboration while there are also many conflicts?

As stated before, collaboration is named as something to strive for in projects, yet does it help with preventing conflicts, which is what these questions might shed a light on. The questions about

collaboration will also help indicate if the cooperative interaction, which has been identified in the previous research steps to help prevent escalation, and collaboration, are considered the same. And at the same moment, that even though you have that interaction, there can still be escalation taken place.

6. This question will be about the interventions applied during the project related to the previously identified factors in section 3.4.2 Conflict Escalation Factors.

The last question, after the different factors and interventions have been discussed will be about the contract type.

7. What is the influence of the different types of contracts on the escalation process?

The scope of the research is all integrated contracts, however, during the case studies only a limited number of projects can be studied. Therefore, it is important to understand the potential different between the different contract types regarding conflicts.

E.6. Data Storage

Notes will be made of the interviews, and for each project a document with the interventions + brief description will be made. The interventions will also be placed in an excel sheet, where they are linked to the related escalation factor. Each project will have its own column.

E.7. Analysis

A qualitative analysis should be used, in which the emphasis is on the comparison and interpretation of the results. The results will be in depth rather than breadth. The cases need to be studied independently from each other, per an established pattern. Then a comparative analysis is done based on the results, where explanations for the similarities and differences between the various cases need to be found (Verschuren & Doorewaard, 2010).

The excel sheet, with the different interventions listed for each factor will be analysed for the following:

- Which factors have no linked intervention in any of the projects, and what is the reason?
- What interventions have been used during all projects?
- What interventions have been used during one project, but not during others?
- The difference between de Knoop (collaboration in EMVI) and the other projects, does spending attention early on lead to less escalation?
- In PiZa, based on their end evaluation, are those interventions also used in projects with few conflicts? Which would indicate that these would help.
- During previous interviews, and in literature, interventions are mentioned, how do these compare to the interventions used?

There will be interventions used in project with few conflicts, thus these interventions could have led to few conflicts. And during PiZa, lessons were learned about what could have been done to have only few conflicts. Furthermore, in the literature, and during previous interviews also interventions are mentioned. The overlap between them (thus several interventions mentioned several times) could indicate that these are the correct interventions. Interventions that have only been used once, could also contribute, but there would only be limited evidence of it.

Factors that have no interventions but are considered important, could have been overlooked, which could lead to recommendations of areas to study. The same for unique interventions that have been used only in a single project.

The limitation of the research is the limited number of cases done. Interventions that may be found unique, might not be in the larger context. The validation interviews will help to identify the considered unique, but not unique interventions.

Appendix F:

Interview Results

Contract Management

The interviews that were done together with other students of the TU Delft are analysed in this appendix. The interview protocol can be found in (Appendix C: Interview Protocol Contract Management). In total 14 contract managers were interviewed, of which 10 are working for the client side, 4 for consultants (currently on behave for the client) and 2 contractors. As this research is aimed at the role of contract management in conflict escalation prevention, the interviews with the contractors will not be analysed for defining the area of influence of contract management. However, issues related to conflict escalation/management will be used in the analysis.

All interviewed contract managers are working on integrated projects, of which 6 for projects of the waterboards/water authorities, 3 for projects of Rijkswaterstaat, and 3 for the Rijksvastgoedbedrijf, of which one during the exploitation phase. All other interviewees were active during the design and build phase.

F.1. Definition of CM

Contract management should oversee the entire process of contract creation and execution, and manage everything that is within the scope of the contract.

Based on the answers for what the goal of contract management is, it can be concluded that contract management is about the interaction between the parties of the contract, to ensure that the requirements of the contract are met.

There is no agreement on the approach that should be taken to reach this goal. It varies from just getting what has been agreed and no more, to striving for maximum value. Some consider the contract as something that comes at the second place, with the focus on the collaboration by understanding each other and safeguarding the goal and interests. To try to achieve as much value for both parties, only looking at the contract when there is no other way. To others, this is not a concern, and the contract states what should be done, and the objective reading of it. Contract management is to them mostly the management of how the contract is interpreted.

F.2. Phases and Tasks

Pre-Contract Phase

Contract Management starts in the procurement phase, thus at the exploration of the procurement need. What is the problem and how do we want to procure it, until the contract preparations are done. Carrying out the contract and transfer it to the exploitation phase. 3.5 years ago, at Rijkswaterstaat This development started, before there were separate procurement and realisation departments. This development is also ongoing in other organisations.

To other interviewee, contract management starts only after the contract has been awarded, before it falls under the responsibility of procurement. At the RVB there is no consensus, although the trend is that the contract manager becomes involved at earlier stages.

The reason for this, according to most interviewees that it is important for the quality of the later stages that the contract manager is involved early on. As the contract manager knows what the impact from the choices made early on will be on the later phases. The task of contract management/manager before contract close was described by one interviewee (CM Client) as followed:

“To ensure there is a good contract, he needs to define the procurement need well. He needs how to approach the market and translate that to a contract and manages the performance of it. Thus, the directing role for the procurement and ensuring that the right things are in the contract and delivered.”

As to the importance of no longer separating the phases, one interviewee (CM Client 2) said:

“I am a supporter of continuity, that you are confronted yourself by the choices that you have made in an earlier phase. The choices you make in the start are of influence on the realisation.”

Another interviewee (CM Consultant 1) said:

“The intention is important, you can’t put everything on paper. The moment you have transfer to another person, he will read what is on paper differently than it might have been meant. Furthermore, there is a loss of information. Every team has a collective memory which can handle small changes in the teams.”

The tender phase is the only phase where you can say something about the requirements and procedures. In the realisation phase, it is about what are the requirements are as set forth in the contract, and how to achieve them. To get what you have agreed and to ensure a good completion and transfer of the work. And as one interviewee said: *“How contract management is performed is shaped before contract is awarded.”*

Contract-Phase

Contract management is responsible for the performance measurement, either based on the method of SCB, or other tools. It varies which other tools are being used, and some interviewees were not exactly sure which tools there are in the organisation. All agreed on SCB being used to measure the performance of the contracting parties quality system, and this method is used in most projects. Some interviewees stated that SCB is primary used for the justification of payments, even if you cannot check everything in the project. It is a risk based method, where the largest risks are monitored, and it has nothing to do with the end result. The contract manager/management is responsible for ensuring the contractor gets paid on the basis of his performance according to scb.

One interviewee mentioned, that contract management should only intervene when risks are noticed, and should not meddle in everything the contractor is doing.

Change Management, it is a kind of negotiation about what needs to be changed and then who needs to pay for it depending on the cause. Those that have an impact on the budget/planning/quality need to be agreed upon before they can be implemented. The contracting party is free to disagree with the proposed changes/impact.

Relation Management was not mentioned specifically during most of the interviews, although several contract managers indicated the importance of the relation with the other party. It is seen more as a part of change management, and dealing with issues as they arise, although one interviewee (CM Client 3) said:

“To summarize, I would say that the main responsibility is to make sure that everybody is aware of their own responsibilities, everybody is aware of the other party’s interest and what they want from the project and to manage this relationship properly so that there is no conflict”

Good relationships must be developed and maintained in the 30y contract (like a marriage; long time obligation, long time relation). Interest shall be acknowledged among the parties. You can choose, use the legal framework of the contract and fight over every issue (only party benefiting: lawyers), or understand each other's interest, working together in a transparent way.

The communication with the contractor goes through the contract manager as well as signalling to the project manager when elements change. Contract management is more about dealing with the product and the contracting party.

An important phase is just before completion. When the majority of the work is done and just small things are left. The internal project manager still has a leading role and he starts losing interest/attention for matters after completion, because then his role is over. You notice that the consortium uses that period of great fuss and the distracted interest of the project leader to arrange a couple of things for themselves. Which is a risk for the contract manager of the exploitation phase. This transfer period needs to be arranged better.

F.3. Contract Management in relation to other roles

According to the IPM model, the interviewees gave that the Project Management role is more internally orientated to ensure that the different disciplines work together, and is responsible to accommodate/adapt to internal and external stakeholders. Furthermore, the project manager manages the entire team. The project manager/management is accountable for the entire project, while contract management is only responsible for a part. Moreover, the decisions for scope/budget, etc. fall under the responsibility of project management.

The contract manager needs to ensure that the different disciplines collaborated in the contract, and in the contract-phase the contract manager becomes the contact person for the contracting party. When the contract manager cannot resolve an issue with the contracting party, the project manager becomes involved. However, this can only be the case when there is a separation between the PM and the CM in the interaction with the contracting party, which is not always the case. The escalation further up in the organisation, is the responsibility of the project manager.

There is some disagreement between the interviewees if there is a change of roles between the PM and the CM during the contract phase. According to some the contract manager becomes more in the lead, while for others the PM stays in the lead. To all, the PM stays responsible for the project results.

The technical manager is responsible to get the technical requirement in the contract, due to that he has an interface/overlap with the CM, just not with the PM. The TM is more for the content. As one interviewee said: *"The technical part you can do without a contract, but to make a contract without the technical is not possible."*

At the Rijksvastgoedbedrijf, in the exploitation phase of a project, there is no project manager. The contract manager of the rijksvastgoedbedrijf (the building), together with the contract manager of the V&J (facility service) are on point, with the support of technical management. The involved roles are the asset manager, the contract manager of the user organisation (who is involved with the facilities services and have a greater interest in a good relationship with the consortium).

Contract Management is a team activity, where different persons perform the different aspects related to their field of expertise, for example: legal, testing, auditing, and reviewing. The contract manager is the manager of the contract management team.

F.4. Related to Conflict (Interventions)

During the interviews, the majority of the interviewees discussed the relation between the parties in their answers on different questions. It differed per interviewee how much he/she found the relation important, although most underline that it is an important factor. One interviewee said (CM Client 3): *“You should not only work the contract but also maintain a good relation. There are grey areas with projects, for these parts you need to know how to collaborate.”*

Furthermore, it depends on the context/relation on how matters are approached (CM Client 4): *“It all has to do with relation, and what has happened, and what they have promised. Because of the relationship I can now accept the work because I know they will correct it, with a different management team I would not have.”*

And (CM Client 5): *“The Project failed because people were kind of stuck in their behaviour, and did not have much trust, both way arounds.”*

Thus, the soft “skills” are found important besides having a good contract. To prevent conflicts, parties should invest in the relation. The dialogue with the other party should start at an early stage (CM Consultant 2): *“In increasingly more projects, you see that in an early phase the emphasis is on the dialogue with the other party, to ensure a better understanding between the parties.”*

And (CM Consultant 1) *“Invest from an early stage a lot of energy and time in the relation with the contracting party, starting during the dialogue phase. To make sure that parties understand each other, manage expectations, find out the potential problems, start with teambuilding, and get a feeling for each other.”*

Communication is found one of the more important aspects, to create understanding, trust and to find out about problems early on. Furthermore, allowing the contractor to make at least some profit is also beneficial to the relation.

Several ideas were given for the communication moments:

- Begin to build trust at the project start up, a session where you try to discuss what your expectations of the project are, work out the details that are not clear in the contract
- A seminar at the beginning of the project with all the involved parties, to discuss what went right and wrong during previous projects, at the end we have a good start of a relation, which made the outcome of the project a lot better.
- Intensive talks between the parties to signal problems early on by having regular meetings.
- Communicate daily.
- Make sure the contractor checks his ideas with you
- Regular meetings to discuss all kinds of problems, satisfaction with how the project goes, do you have a problem, do you like the team, every month or two, has positive effect on the relation

Moreover, several comments were made on how to create a good relation:

- Keep things professional, not personal, agree on this beforehand. Discuss matters that you need to discuss
- Agree on shared vision, on how to handle matters
- Make clear agreements, and say something about it if someone does not uphold them.
- Invite people to be open, and that they can bring up issues
- You have to try and solve problems from the beginning, rather than being confronted by them later
- Sometimes two personalities do not fit, you must do something about that. There might be a person opposite from you, who might enjoy the fight. It becomes difficult when a conflict

becomes personal, then it could be the case that two persons cannot work together any longer.

- You need to know what drives them and what they find important
- You need to make clear what is important to you, even though you think they do, they might not know it.
- An atmosphere of trust for open discussions.

A balance needs to be found though, as (CM Client 2) *“It is continuously balancing between the relationship and formality. You should see which helps the situation more. Finding the balance is the most difficult, you have to do it together but at some point, it is enough.”*

Appendix G:

Results Interviews

Conflict Escalation

The interview protocol can be found in Appendix D: Interview Protocol Conflict Escalation. The results of this set of interviews

G.1. Conflict Model

There were several assumptions made for the conflict model (see section 2.6) that needed to be tested in the interviews.

- A distinction can be made between functional and dysfunctional conflicts

All interviewees agree that a distinction should be made between different types/stages of conflicts. Although, the majority had trouble with the way these were named. To them, you first have a disagreement about the content, which starts at the operational level, and which can then escalate towards a conflict, where also other factors play a role. This distinction overlaps with what was defined in chapter 2, however, the terms will need to be named differently to match the perception of the those in the field. They agreed that you have functional and dysfunctional conflicts and that you have a disagreement before a conflict.

- Task Factors

Interviewees suggested to rename this group to “project factors”, otherwise they agreed with the definition of the factor group. It was stated that the main importance is the impact and responsibility of the factor.

- Process Factors

This group was understood and agreed upon as the group consisting out of the contract documents, agreements, procedures and the decisions before contract close that set the conditions for the project.

- Social Factors

The interviewees agreed with this factor group, although most named it attitude & behaviour of those involved, and interests of the different parties.

- Functional conflicts only arise due to a combination of task and process factors

This is considered to be correct by the different interviewees.

- The actions/approach of the conflict is directly influenced by the social factors

Correct, the importance of the category of social factors was supported by the interviewees on the escalation process. It was supported that these have a major influence on the approach of the parties during a disagreement or conflict.

- The process factor group does not directly influence the approach/actions, and the process factor group influences the social factors

Partly true, the process factors consist out of the contract documents, procedures, and agreements between the parties. The procedures about communication or conflict escalation, have an impact on

how matters are approached. Furthermore, the contract terms influence the interests of the different parties of the contract. Moreover, they set the initial conditions for the collaboration between the parties. Thus, the process factors have both a direct on the approach of the parties, as an indirect effect on the social factors.

- The task factors have no (in)direct influence on the escalation of conflicts

Incorrect, different interviewees stated that there are two elements of the task factors influence the approach/escalation, namely the impact of, and responsibility for occurred situation. The impact and responsibility have a direct influence on the interests of both parties, which form a part of how the social factors were identified in this research before.

- Past Performance influences the social factor group

Partly true, past performance of the tender, project and conflict have all been identified as factors that could directly influence the approach of the different parties during a conflict, and indirectly the different interests of the parties.

- The choice of conflict management style is influenced by the social factors.

Partly true, as stated before, the choice of conflict management style/the approach is influenced indirectly by the task, and directly by the process and social factors. The combination of all these factors determine, in combination with the conflict approach of the other party, what conflict management style is applied in each situation.

G.2. Conflict Factors

The factors that influence the escalation process of a disagreement into a conflict can be divided into several groups. The attitude and behaviour of those involved,

The factors as identified in the literature in 2.4 and 2.7.3, were questioned during the interviews, if they were recognized as a contributing factor to the escalation process of a disagreement to a conflict. All these factors were recognized by the different interviewees, although there was disagreement about the influence/impact of those factors.

However, the interviewees also mentioned more factors that have an influence on the escalation. Each of those factors could work positively/neutral, or negatively on the conflict escalation process. An example of this is trust, which when present could work de-escalating as parties are willing to have an open discussion about the matter, and in case there is distrust, it would result in parties keeping their cards close to their chest.

In the interviews, examples were given of the factors that play a role in the escalation process. These examples are available in the notes/recordings, and will not be given in this document as they are of ongoing projects.

The following factors were mentioned during the interviews, that were not found in the literature:

- Continuity of project team
 - Spirit of the agreement
 - “Knowing” the other party
- Relationship between OG/ON
 - Trust between the parties
 - Understanding of the reasoning behind decisions/actions
 - Transparency
 - Honesty of those involved
- Personal circumstances

- Work stress
- Stakeholder interests
 - Governmental organisations (V&J, rijksgebouwenmeester, etc)
- Communication procedures
- Conflict escalation procedures
- Competencies
 - Contract Interpretation: whether someone grabs the contract right away, or acts in the spirit of the agreement.
- Discipline interests
 - Acting to guarantee matters related to your discipline, rather than taking the entire project interest into account.
- Conflict Attitude
 - Whether someone enjoys conflicts and does not mind having them, or prefers to avoid them.

G.3. Divergent interests and psychological factors

One of the interviewees, who has a lot of experience with conflicts in the role of judge and mediator, explained that the causes of escalation can be divided into two groups, namely divergent interests, and psychological factors. In her experience, first the interests of the parties play a part in the escalation, and then later the psychological factors become involved. A conflict cannot be resolved until the psychological factors have been dealt with, as they cloud the perception of those involved. These factors might unknowingly play a part in the interaction between the parties, making it so that the discussion is no longer (only) about the cause of the disagreement.

G.4. Disagreement Escalation

Several interviewees stated that is not necessarily a bad thing that conflicts escalate in terms that they move up the ladder in the project/organisation. If it happens on a timely manner, with each party being aware of the producers. This will allow for a new objective view of the disagreement cause. They also stated that it is best to solve a disagreement as early, and low as possible on the organisational ladder.

G.5. Conflict Approach

- A cooperative approach needs to be chosen to prevent conflict escalation

Partly true, according to the interviewees a cooperative interaction between the parties during a disagreement could prevent that a disagreement/conflict will escalate. However, a cooperative interaction does not mean that conflicts will not escalate, it only says something about the way how parties interact with each other, and thereby how the escalation will take place.

Of the five styles as identified in 2.7.1 Conflict Management Model, **problem solving** was identified as the preferred style in most situations, unless the issue was too small, then it might not be worth the effort. **Compromising** was named as a second choice, especially when the issue was smaller and/or should be solved fast.

The **conceding** style does prevent escalation, although it can set a precedent for further situations and it could harm your own interests/goals. Therefore, it should not be used, unless the issue at hand is trivial or/and does not hurt your own interest/goals.

The general consensus was that the **avoiding** style should be avoided, although one interviewee stated that it is an art to know when to avoid a possible disagreement, as things tend to solve themselves rather often. According to the other interviewees, avoiding would only lead to unwanted escalation

(of the impact) of the disagreement, and it would always be something that you keep thinking of in your mind. Thus, it is best to resolve things early on, before they have a large impact, or have an influence on other matters.

Imposing was by everyone identified as a style that would cause escalation, and should only be used when the issue is critical to the interest of the project, or goals of the organisation.

Furthermore, it was stated that it depends on the actions of the other party what resulting approach would be. Giving the right example was something the majority of the interviewees agreed upon as a responsibility for the client.

Cooperative interaction (or collaboration) has to do with the willingness to consider each other's interests, to be open for the motivation/solutions of the other party, thus being willing to listen and consider, and make use each other's expertise when confronting possible problems. Thinking along with the other party when they have a problem is found key.

G.6. Area of Influence Team Members

In the project teams, the role of the contract manager is a flexible definition. In the project team, no pre-set structure/task division was used, and each project was free to give their own shape to the responsibilities each role has. The responsibilities of the contract manager in one project, could be different in the next project. The interviewees stated that most of the times the project manager, (or process manager, or project leader (same role, different names)) take the lead during a conflict situation. The tasks that form a part of contract manager can be done by either the project manager, or the contract manager, or divided over more team members.

The reason for this is that the different responsibilities are divided based on the qualities and preferences of those in the project team, and they want to prevent that there are two captains on the same ship. Therefore, when looking at when a role is involved in the escalation process, only a general division can be made. However, this says nothing about the field of contract management, as the tasks are not related to a single person.

A disagreement arises between the experts, then when it escalates (cannot be solved) the technical managers become involved. After that it goes to the management team layer, where the project manager takes the lead in the discussion. If it cannot be resolved at that level, the integral project responsible (or appointed conflict manager) becomes involved. After that it escalates towards a claim and dispute.

Appendix H:

Interventions

The interventions in this appendix consists out of 7 parts. First the answers on what the required interaction between the parties is will be given. Than the interventions found in the literature on contract management, during all the interviews, and the case studies (including document research) for the different main escalating factors are specified. The interventions than combined in an overview, sorted per main factor, and overlap. Based on that, and the conflict escalation process, main and sub interventions will be formulated.

H.1. Collaboration

When the question was raised what cooperative interaction/collaboration is, there was a variety of answers.

- CM TR: you need collaboration to realise something together, by consulting, adjusting and making agreements on how to reach the objective. You can put this on paper, just you have to look each other in the eyes and get to work together.
- PM and CM PZ: Collaboration is asking if things are okay, can I help you, but it is not collaboration in the sense of making deals, or coming up with the solution together. The responsibility stays with the contractor. We can take their objectives/interests into account though. To solve matters on a professional way, it is about how both parties interact/act. To summarise, considering and facilitating.
- PM K: Collaboration is trying to align the interests of both parties, so that you work towards the same goal, considering each other's interest.
- CM K: Genuine interests in each other (interest), while keeping emotions out of the picture, and when they surface, to handle those quickly.
- PM RB: Helping each other without taking responsibility for each other, looking for the obstructions and how to deal with those. You should not do the work of the other party, however, that does not mean that it can happen without problems. You have an obligation to each other to reach a satisfying conclusion, as both have a shared interest in having a good building.
- HB: That you think together on finding a good solution. Be open for what the cause of the problem is, and how to consider the others interest without compromising your own.
- RR: Collaboration is about how you interact with each other, it is about thinking along with the contractor, help each other notice mistakes and then giving the opportunity to correct those. Interacting based on trust.

CM interviews:

From the previously held interviews, a couple of elements could be found in relation to collaboration/interaction. As it was not explicitly questioned, not all interviewees gave an explanation about what they find part of collaboration.

- CM AB: To solve things together
- CM GG: To discuss matters in a good relation, to reach the common goal of in time and on budget.
- CM HJ: To solve a problem, with parties being open for each other's points of view
- CM MW: Considering each other's interest
- CM WK: A good collaboration is having a good relation, good balance between requirements and payments
- CM TF: Manage each other's interests, align interests, goals, and expectations
- CM IK: Aligning objectives of client and contractor

- CM: PP: Creating a common story

Based on this definition for collaboration is formulated:

Collaboration is working towards a common goal while considering each other's interests and objectives, by thinking along with the other party and facilitating their (problem solution) process, without taking the other's responsibility.

H.2. Results Research Steps for Interventions

The interventions in this appendix are found in the literature study (4.5 Contract Management Related Interventions), mentioned during the different interviews, and are the results of the case studies. The interventions will be presented per main factor, and per research step. To identify the different interventions, an earlier division of factors based on individual and team level was used. During the research, this division appeared not to be correct presentation of the factors. In this appendix, the factors are sorted based on the earlier structure (chapter 2), during the analysis, the new structure as discussed in chapter 3 will be used. There the interventions will be linked to the different sub-factors.

H.2.1 Interventions from Interviews

During the research, several interviews with a different main topic than the interventions were held with professionals. These were the interviews about contract management and conflict escalation. In those interviews, possible solutions were mentioned for in the interview discussed problems/factors. Moreover, during the case studies, interventions which might help in new projects were mentioned that were not applied in the discussed case. All these interventions will be used during the analysis.

Personal circumstances

Intervention
Get to know people outside work environment.
Informal contact during project outside meetings: for example, by drinking coffee together.

Personality

Intervention
Get to know people outside work environment.
Informal contact during project outside meetings: for example, by drinking coffee together.
Teambuilding session(s)
Change project team members in case of problems
Speed dates in pre-contract phase with those who will work on the project in realisation phase.
Team assessments of internal/external teams
Regular meetings to discuss all kinds of problems, satisfaction with how the project goes, do you have a problem, do you like the team, every month or two, has positive effect on the relation
Keep things professional, not personal, agree on this beforehand. Discuss matters that you need to discuss
Selection based on team members

Competencies

Intervention
Team assessments of internal/external teams

Personal Interest

No interventions were mentioned directly, however, it stands to reason that several of the other suggested interventions will also impact the personal interests.

Atmosphere

Intervention
Formulate core values for both parties, and keep reminding people of it.
Teambuilding session
Make clear how you interact with each other/what you expect
Appreciate the work of the ON, do not only focus on things that go wrong
Celebrate successes
Incentives to motivate behaviour, although it would only work in combination with soft factors, and it can invite strategic behaviour.

Project Interest

Intervention
Give insight in your interest, you need to make clear what is important to you, even though you think they do, they might not know it.
Try to understand the ON interests, you need to know what drives them and what they find important
Find out about potential friction/problems in an early stage before they become too large
Discuss risks during meetings
You have to try and solve problems from the beginning, rather than being confronted by them later, intensive talks between the parties to signal problems early on by having regular meetings.

Stakeholder Interest

Intervention
Make sure that governmental stakeholders and RVB are on the same line.

Continuity and Trust

Intervention
Have people from the tender phase also participate in the realisation phase.
Trade off matrixes to support decisions
Focus on getting to understand each other's point of views.
Explain why a decision has been made
Give the right example
SCB/quality system of ON
Make budget for quality system available, so ON can see if its sufficient
Agreement is Agreement, do not come back on them
Make it clearly insightful which decisions are made, agree with each other on how to register these
Communicate your interests, and expect to hear the same back
Expert meetings about a subject to give trust on both sides.
Begin to build trust at the project start up, a session where you try to discuss what your expectations of the project are, work out the details that are not clear in the contract
A seminar at the beginning of the project with all the involved parties, to discuss what went right and wrong during previous projects, at the end we have a good start of a relation, which made the outcome of the project a lot better.
Invite people to be open, and that they can bring up issues
Create an atmosphere of trust for open discussions

Context

Intervention
Dialogue phase, ask for ONs view on communication in the form of a dialogue product
Intensive talks between the parties to signal problems early on by having regular meetings.

Communicate on a daily basis.
Make sure the contractor checks his ideas with you
Agree on shared vision, on how to handle matters
Regular meetings to discuss all kinds of problems, satisfaction with how the project goes, do you have a problem, do you like the team, every month or two, has positive effect on the relation
Keep the option open to talk about the penalties in the contract

Disagreement Approach/Interaction

Intervention
Focus on getting to understand each other’s point of views.
Try to understand the interests of both parties, make the consideration what interests weights more, and if you can meet that interest without harming your own.
External view when things do not work out well
Intervene when people are stuck in a viewpoint
Clear weighting of the point of view of the contractor and explain.
Also look back on your own actions
Keep the option open to talk about the penalties in the contract

H.2.2 Interventions Literature Contract Management

During the literature study on contract management (section 6.1) several interventions were identified. These interventions are sorted on their related factors, based on the insight of the researcher.

Personal circumstances

Intervention
Be aware of the behaviour of your team members, and ask
Informal meetings to be aware of the personal events of your counterpart, so that the actions of the other will not influence your behaviour.
Informal, one on one discussions, and interactions between the parties.

Personality

Intervention
Informal, one on one discussions, and interactions between the parties.
Informal meetings to be aware of the personal events of your counterpart, so that the actions of the other will not influence your behaviour
Be aware of the behaviour of your team members, and ask

Competencies

Intervention

Personal Interest

Intervention

Atmosphere

Intervention
Encourage behaviour based on trust rather than adversarial models. This is done by having a professional relation, based on cooperation and mutual understanding.

Practice the appropriate attitude yourself, this will assist the promotion of a positive and constructive relationship.

Strategic

Project Interest

Intervention

Establish mechanisms to manage changes to the contract and make sure the contract is flexible enough to accommodate changes.

Avoid that contract variations are not at such level that they significantly change the contract requirements.

If the client is aware of potential issues, notify the contracting party.

Allocate the risks to the party best able to manage them.

Include incentives in the contract by offering increased profit, or other reward for added value/performance to encourage appropriate behaviour.

Understand the contractors/consortiums business objectives and drivers, and obtain senior management agreement to the need the contractor/consortium need to achieve their objectives within a reasonable profit margin.

The contract terms should be feasible, achievable, measurable, and verifiable.

Set procedures for raising issues and handling problems, so that they are dealt with in an early stage, and at the appropriate level within the organisation.

Deal with issues early on, before the interest become too large.

Identify potential conflicts of interest early on, so that they can be dealt with.

Make risk management an integral part of all contract management cycles.

Risk reviews should be incorporated in regular performance meetings.

Stakeholder Interest

Intervention

Gain support from senior management for the fact that the other party needs to be able to make a profit within a reasonable margin.

Relation OG/ON

Intervention

The terms of the contract should be enforced in a professional manner, based on evidence of contractual performance.

Establish formal change control procedures, including procedures to keep all contract documentation up to date and consistent, to ensure that all parties have a common view on the agreed changes.

Proper change procedures should be used, no informal contract amendments should be agreed upon.

Have a performance review that allows for ongoing feedback, particularly in relation to critical success factors.

Take the potential discontinuity into account, pay attention to preventing information from being lost.

Context

Intervention

Clear comprehensive procedures, related to performance, variations, and conflict/dispute escalation, that are supported by the senior management.

Ensure that the escalation routes are clear and understood.

Discuss potential issues with the contractor first

Give the contractor an opportunity to explain the cause or nature of the non-performance or compliance. This will prevent that formal procedures will need to be used from the start.

Have regular communication.

Establish information flows and communication levels at the start of a contract. Three levels being: operational (technical staff), business (contract/project managers) and strategic (senior management/board of directors).

Separate strategic items from day to day business.

Establish clear lines of responsibility and accountability for all decision-making. Ensure that all necessary authorisations and delegations are in place to ensure that all contracting decisions and payments are valid and legally appropriate.

The contract terms should be feasible, achievable, measurable, and verifiable.

Keep records, of meeting results, measures and actions and share relevant points/make the records available.

State clearly what the effect of noncompliance or underperformance is on the payment, and the intent to invoke penalties.

Furthermore, establish a clear statement of the contract deliverables and an effective performance management regime.

Link contract payments to satisfactory performance by establishing payment milestones that are linked to the contract.

Disagreement Approach/Interaction

Intervention

Adopt the principles of effective communication, it should be open, constructive, non-adversarial and based on mutual understanding.

Provide positive and constructive feedback.

Prevent frequent and rapid recourse to the formal contract documents to overcome problems. The first intention should be to reach a mutually accepted solution.

Prevent that the contracting party feels overly pressured in accepting the solution.

During review meetings, the issues should be discussed openly and honestly, be based on facts and data, and avoid hidden agendas.

Problems should not be overlooked for the sake of the relation. Clear, solution-focussed communication to leads to improved performance will support the professional working relation.

H.3. Case studies

Four case studies were done to identify the applied interventions during the projects, and if in hindsight there would be any interventions that could have been applied. To gather this data, project, and when possible, contract and technical managers of the projects have been interviewed. Furthermore, available documents were studied to identify additional interventions. In Figure 27, the used sources for the different case studies are given.

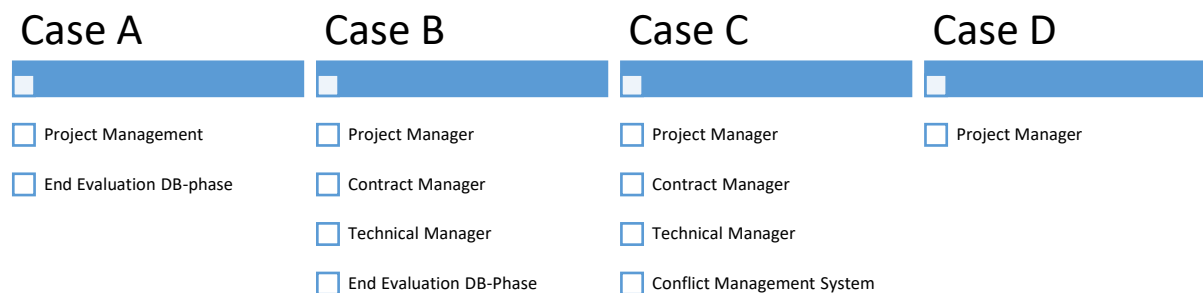


Figure 27: Sources Case Studies

Not all interventions were directly mentioned by the interviewees. For example, system based contracting was only mentioned by one project, while it is applied by all four. Only after asking about SCB in the interviews with the three projects that did not mention it, they agreed that it helped to build trust between both parties. Same case for sharing risk registries, something that three out of the four projects do, while only one mentioning it explicitly. Thus, it is possible that there are still interventions that are being applied, yet are not recognized as such.

The case studies have been anonymised on request of the rijksvastgoedbedrijf.

Case A

This project has a good collaboration with between the parties with only one meaningful conflict during the design and build phase which did not escalate. However, after the design and build phase was concluded a problem was noticed, which led to some tension between the parties. At the moment this is written, it is not clear yet how this disagreement further evolved. It can indicate that the interventions used in the project were not enough to sufficiently manage the escalation.

Furthermore, due to the relative size of this case compared to the other cases, the interests were relatively smaller. Which as earlier identified in this research, influences the chance that conflicts will escalate.

Attitude and behaviour

Personal circumstances

Intervention
Talk to each other outside the formal meetings (ON/OG)
Two times dinner with both OG/ON
Before meetings a walk around the construction site, also informal moments there.

Personality

Intervention
OG team had a good mix of personalities

Competencies

Intervention
Communicate clear and open

Personal Interest

Intervention

Atmosphere

Intervention
Formulate ambition and vision in the start
Do things together

Strategic

Project Interest

Intervention
Shared interest: innovative solution/building. Both parties want to make the building a success.
Sharing risk registries: discuss the top three every contract meeting.
SCB
Be clear about what you really want in the project.

Stakeholder Interest

Intervention
Clear ambition for the project

Relation OG/ON**Intervention**

Expert meetings to exchanging information

Ensured that tender manager ON stayed involved for some time after she got a new job

Focus on continuity works

Context**Intervention**

Shared inbox of each party, it was clear at all times what was the current status, and who was working on it.

Clear task division

Disagreement Approach/Interaction**Intervention**

Contact other party when things are unclear.

Keep open discussion

Case B

This project had several conflicts and problems during the design and build phase. As result of that changes were made for example to the communication procedures and a comprehensive end evaluation was done. The changes, and end evaluation give a good impression of what interventions are useful. The end evaluation interventions have been coded with LL (lessons learned). The results are in Dutch due to the available sources.

Attitude and behaviour

Personal circumstances

Applied/ Lesson Learned	Intervention
LL	Work more often on the same location => see each other more often
LL	The physical distance could be better
LL	Shared project location

Personality

Applied/ Lesson Learned	Intervention
LL	More attention should be paid for the team composition (type of people/competencies)
LL	Involve het right persons (how does the contractor get the right persons?)

Competencies

Applied/ Lesson Learned	Intervention
LL	A miss was the lack of process manager with a helicopter view on the side of contractor
LL	Involve het right persons (how does the contractor get the right persons?)

Personal Interest

Applied/ Lesson Learned	Intervention

Atmosphere

Applied/ Lesson Learned	Intervention
LL	Celebrate successes
LL	The physical distance could be better
LL	Different "worlds" government ⇔ contractor and it is hard for them to understand each other sometimes. Positive was the interventions on collaboration.
A	Informal relation went good, although there were some risks in it that were handled well.
LL	Shared project location.

**Strategic
Project Interest**

Applied/ Lesson Learned	Intervention
LL	Clearly describe matters that are crucial, or come to a joint solution after award.
LL	Do a risk assessment, what do I prescribe and what do I let go?
LL	More input where possible (contractor stays responsible)
LL	In the dialogue phase it is hard for the contractor to get a complete grasp of all the requirements.

Stakeholder Interest

Applied/ Lesson Learned	Intervention
LL	Internal State: better connection with the user and determine this per phase.
LL	What is the expectation behind the service (end user vs writer OS)
LL	More active in the management of het expectations of the end-user.

Relation OG/ON

Applied/ Lesson Learned	Intervention
LL	Mindset with which you start the collaboration. Check assumptions.
LL	Discontinuity in contractor's project team required more attention on the communication.
LL	More attention for knowledge transfer during team changes.
LL	Secure knowledge and involvement over the entire project including the exploitation.
LL	Different "worlds" government ↔ contractor and it is hard for them to understand each other sometimes. Positive was the interventions on collaboration.
LL	Many interpretation differences: Solution: summaries, SMART lists, etc.
A	Verification sessions
A	Collaboration sessions
LL	No clear how choices are made when to discuss a technical solution with the state. Better address issues.
LL	Better verification/validation process, from design to product, from design to work preparation. Loss of knowledge during build phase.
A	Request examples of products, led to more quality.
A	Many services worked out into details for creating a better image of them.
LL	Explain why certain products are requested from the contractor, this leads to mutual understanding.
LL	Record agreements well, and inform the those not directly involved about it.
LL	To many changes from design to build phase, this should be decreased.
LL	Know the lead times of each other's decision processes.

Context

Applied/ Lesson Learned	Intervention
A/LL	Clear communication structure, just not on every layer the right thing was discussed/kept to the purpose of the meeting.
LL	Record agreements well, and inform the those not directly involved about it.
A	Change process was clear, just lead time could be improved
A	Complete process with good work agreement
LL	Better describe the escalation procedure
LL	Equal mandate for decision making
A	Milestone payment works, the amounts could eventually be lower
LL	Discount system should be fair
LL	Process and operation level should reach quick decision be means of the snelkookpan method.
LL	Unambiguity in the recording of work sessions.
A/LL	Do not discuss issues at several project layers on the same time

Disagreement Approach/Interaction

Applied/ Lesson Learned	Intervention
A	State that the collaboration is not working well => action => constructive collaboration
A/LL	Think along with each other
LL	Communicate! Both ways
A/LL	Find solutions, quick process, don't besturen en banken.
A	Cut between when finding solution between technical and financial, eased the collaboration
A	Keep talking to each other
A	Session about collaboration brought understanding about changes and output specifications
LL	Give more input, contractor stays responsible.
LL	Give more input when you know what you want to achieve/have.
LL	Be willing to take responsibility as advisor to help find the contractor a solution for the problem
LL	Knowledge transfer of the primair proces. Exchange information between process and engineering.

Case C

This project has had no escalated conflict to this point and the collaboration between the parties is working well. Significant effort and thought has been put in preventing the escalation and thus far it seems to be working.

Outline

During every major step focus on the ambition (collaboration) and special attention was paid in the pre-contract phase to the collaboration. During the pre-contract phase, there were certain steps taken for creating the conditions for cooperativeness.

Awareness is essential. During each big project step emphases is placed on what we are doing, what are the ambitions. The personal ambition may be discussed, just always in service of the larger project. You should start with this right from the beginning.

Ambition documents when there were 8 candidates.

Speed dates to show that besides the physical purposes it is also about how you collaborate and how you learn to know one and other. It served as a signal that it is also about the involved people.

Selection phase with interviews with the parties that will play a role in the exploitation phase. Questions were made in cooperation with an expert, the interview results were given to a jury. Two persons of each candidate were interviewed. The interview was about how will we cooperate once we have the building.

Dialogue products to create the awareness that it is not only about the building, just also about how we achieve it. Example of requested products: vision on the collaboration, conflict management system, interface analysis.

Informing the market parties. From the start, it was made clear to the different consortia how the RVB envisioned the interaction between the parties. That they would like to operate based on trust, which resulted in a different flow.

Interview/selection phase. In this phase, key employees of the potential contractors were interviewed per the same protocol. Several companies that are good in the building aspects did not pass this phase, as they did not perform good enough in the collaboration aspects.

Dialogue Phase. During this phase, several products were requested form potential contractors. The products were about collaboration, conflict management, and sustainable partnership. They had to describe how they thought about the interaction between the parties, and how to do that as a sustainable partner. Several examples/products were provided beforehand. Furthermore, information was shared about who the RVB had asked to develop those products.

Although, this approach might not be feasible in another project with a shorter run time. There needs to be a balance between the length of the dialogue phase in comparison with the rest of the project. Else you are just placing a too large burden on the potential candidates.

Award Criteria. The relative importance of the collaboration and building related criteria was 50/50. This to show the importance of the collaboration aspects to the RVB. The criteria had to do with attention for interest, respect, and matters like that. It is important to consider how to make the “soft” part of collaboration measurable. The different consortia each wrote differently about these criteria. Several of the losing parties indicated that this was a good idea, and the idea should be continued.

Products/procedures. A conflict management system is included in the contract as a procedure, so that when a conflict arises, the parties know which steps to take. Furthermore, it is also stated when other parties become involved, this could be both internal as external personal, depending on the conflict. The lack of conflict management system was indicated as a potential source of problems, and something that is normally not included in other projects.

Attitude and behaviour

Personal circumstances

Intervention
Trade of Matrixes and Internal Deliberation
Same project location
Check in during meeting. Ask how people are feeling, do they have the energy they want to have, are they distracted by other matters. When you know what keeps someone occupied then you can take this into account and you understand his attitude better.
Observer during meetings: Gives who was visible in non-verbal behaviour

Personality

Intervention
When you notice that the other’s or your own behaviour has an influence on the process, mention it. Be open about these kinds of things. Place it on the agenda to make people aware of this influence. Take the personal situation of someone into consideration.
Trade of Matrixes and Internal Deliberation
Observer during meetings: Gives what was visible in non-verbal behaviour
Check in during meeting. Ask how people are feeling, do they have the energy they want to have, are they distracted by other matters. When you know what keeps someone occupied then you can take this into account and you understand his attitude better.

Competencies

Intervention
Feedback training with project team members of both parties.
Conflict Management Training with project team members of both parties.

Personal Interest

Intervention
Trade of Matrixes and Internal Deliberation

Atmosphere

Intervention
Celebrate successes
Appreciate work of contractor

Strategic

Project Interest

Intervention
Be aware of the interests of both parties, and how it will affect them
Create mindset that both parties are working on it together
Signal and handle potential issues as soon as possible, place it on the agenda during meetings.
Consider each others interests, even it is does not influence yours
Protect your own interest; Due to procurement law, you need to be careful what you consider a change, and what a different elaboration of the contract terms. Furthermore, you should not compromise your own interests in favour of those of the other party.
Share Risk Registers

Stakeholder Interest

Intervention

Relation OG/ON

Intervention
During PSU/PFU focus on collaboration/relation between the parties and not the building.
Give the right example
Share as much information with each other as possible
Trust unless , that you know for about 80% the risks you have. We test risk based, where do we have the most risk and lets steer on that. We trust that the contractor is able to build/design, trust unless, act based on that rather than distrust.
Give the right example yourself This helps motivate the other party to follow the same behaviour, you can not ask something of the other party, while not doing so yourself.
Stay professional Collaboration does not mean being friendly to each other, however, you should not unnecessarily be harsh to each other either. You need to stay professional, protect your own interest and explain clearly how and why.
Trade of Matrixes and Internal Deliberation
Kijkje in de Keuken
Share Risk Registers
Expressed the important tot he market party, requested that they would largely work with the same people. Make sure that the mindset of the pre-contract phase is transferred to the contract phase.
Invest in new people, bring them up to speed and explain this project is different than other projects.
“Project” Academy, To transfer knowledge between build and design phase to the exploitation. Was offered as a dialogue product on the question of how to keep alive the ambition, what we know of each other in the exploitation phase

Context

Intervention
Conflict Management system, first as a dialogue product, after award a joined effort of both parties to finalise it.
Be considerate of contract terms Even if things are arranged in the contract, you can still make changes if the other party considers them unfair. However, the effect of it on the current and next phases will need to be considered carefully.

Disagreement Approach/Interaction

Intervention

Handle conflicts as soon as they arise regardless of who notices them

Try to solve them first informally, without formal notes

Have respect of each other, genuine interest in each other's interest and be open about your reasoning. Do not avoid a conflict, and keep emotion separate of it. If emotions play a role, handle them as soon as possible and do not suppress them. Be willing to consider solutions that will help both parties, propose solutions for each other.

Consider situations per issue, and not combined

For clarity, understanding, it is important to handle matters per issue and not to combine them in the same discussion. This also helps with being accountable to other parties, as you can show exactly why things have been decided, even after a couple of years have past.

Respect each other

Share as much as possible with each other, and have as little surprises as possible. It is also managing expectations.

Case D

Several conflicts have appeared during this project. The emphasis was mainly on how do you handle a disagreement/conflict once it arises. A characteristic of this project was the amount of actively involved stakeholders of other governmental organisations.

Attitude and behaviour

Personal circumstances

Intervention
Ask when you notice that someone has a problem
Drink coffee, etc
Speak up when something is bothering you, then it can be resolved
Get to know each other

Personality

Intervention
Ask when you notice that someone has a problem
Drink coffee, etc
Speak up when something is bothering you, then it can be resolved
Get to know each other
Name behaviour

Competencies

Intervention
Genuine interest in other people
Helicopter view

Personal Interest

Intervention

Atmosphere

Intervention
Dialogue: talked about collaboration, how we want to
Talk about collaboration during project, what goes wrong, what goes right, what needs to be changed
Bouwreflectie: one person of the OG and ON look at how the parties work with the goal to notice conflicts in an early stage and to solve them.

Strategic

Project Interest

Intervention
Try to find out why people want something
Explain what is important for you, what you want
Respect each others interest
Involve someone from the outside, who has an objective view
Look for opportunities to strengthen each other
Make the pro/cons insightful, and the consequences of decisions
Weight the different interests

Both parties want to create a good building, the consortium needs to run it in the exploitation, and we need to use it
Share risk registries
Work together on learning more about the risks/what needs to be done, not everyone can translate their risks to concrete actions

Stakeholder Interest

Intervention
Involve someone from the outside, who has an objective view
Respect each other's interest
Look for opportunities to strengthen each other
Make the pro/cons insightful, and the consequences of decisions
Agree that one party speaks for all
Reach common ground before talking to ON
Understand each others core values
Weight the different interests
To create support, stakeholders/users still have influence during realisation phase on project
Manage expectations
Be aware of what/when stakeholders need to do/decide something, and let them know the consequences if they dont

Relation OG/ON

Intervention
Dialogue: talked about collaboration, how we want to
Try to find out why people want something
Explain what is important for you, what you want
Talk about collaboration during project, what goes wrong, what goes right, what needs to be changed
Trade-off matrixes
Bouwreflectie: one person of the OG and ON look at how the parties work with the goal to notice conflicts in an early stage and to solve them.
Constantly check if parties understand each other, and how they see the situation
Speak up when something is bothering you, then it can be resolved
Share risk registries
Expert meeting, about technical things and collaboration (reflection)
Think about how to bind people to the project, and never focus on one person to be the constant.
Express the need for continuity

Context

Intervention

Disagreement Approach/Interaction

Intervention
Do not take the responsibility of the other, yet help each other
Be clear
Be open
Ask yourself: What is the problem? What are the interests? What is most important? What else plays a role? How bad is it really?

H.4. Analysis Interventions

The identified factors were gathered in an excel file and sorted per main factor. Then the interventions were sorted on overlap (mentioned by different sources). In Figure 28 one of the in total 10 sheets is given as an example of the result.

	Interviews	Literature	Tijdelijke Rechtbank	De Knoop	PIZA	R8 Broda
Personal Circumstances, and involved personalities (overlap between personalities and circumstances in interventions)	Get to know people outside work environment.	Informal meetings to be aware of the personal events	Talk to each other outside the formal meetings	Informal contact	Informeel ging het goed, had wel risico's	Drink coffee, etc
	Informal contact during project outside meetings: for example, by drinking coffee together.	Informal, one on one discussions and interactions between the parties.	Two times dinner with both OG/DN			Speak up when something is bothering you, then it can be resolved
	Get to know people outside work environment.	Informal, one on one discussions and interactions between the parties.	Before meetings a walk around the construction site, also in informal moments there.			Get to know each other
	Same project location			Zelfde locatie	Gezamenlijke projectlocatie.	
		Be aware of the behaviour of your team members, and ask		Check ins	Meer op een locatie samen aan het werk zijn zo elkaar zien / spreken	Ask when you notice that someone has a problem
Personality (personalities and conflict attitude)	Team assessments of internal/external teams				Goede personen betrekken. (Hoe komt een ON aan de goede personen/partijen?)	
	Selection based on team members				Meer aandacht voor gezamenlijke teamsamenstelling bv soort mensen (vergelijk RWS) / keuze van mensen (competenties)	
	Speed dates in pre-contract phase with those who will work on the project in realisation phase.			Speeddates with people who will become involved		
	Intervene when discussion is stuck, escalate to level higher		Intervene when discussion is stuck, escalate to level higher	Observer during meetings	Intervene when discussion is stuck, escalate to level higher	Bouwreflectie
			OG team had a good mix of personalities	Trade of Matrices and Internal Deliberation: objectief decision making		Trade of Matrices: objectief decision making
Competencies	Change project team members in case of problems		Communicate clear and open			ON team member changed on request due to culture
				Feedbacktraining with project team members of both parties.		
				Conflict Management Training with project team members of both parties.		
	Team assessments of internal/external teams				Gemis was een procesmanager met helicopterview aan de PIZ-kant	
					Meer aandacht voor gezamenlijke teamsamenstelling bv soort mensen (vergelijk RWS) / keuze van mensen (competenties)	
Personal Interest					Goede personen betrekken. (Hoe komt een ON aan de goede personen/partijen?)	
						Genuine interest in other people
						Helicopter view
				Trade of Matrices and Internal Deliberation: objectief decision making		Trade of Matrices: objectief decision making
Atmosphere (collaboration is interaction between parties)	Celebrate successes			Celebrate successes	Successen vieren	
	Teambuilding session		Do things together	Training sessions together with ON	Intervention on collaboration (day about)	
	Formulate core values for both parties, and keep reminding people of it.		formulate ambition and vision in the start	Ambition document on how to collaborate		Talk about collaboration during project, what goes wrong, what goes right, what needs to be changed
	Make clear how you interact with each other/what you expect			PSU/PUU about collaboration		Bouwreflectie: one person of the OG and ON look at how the parties work with the goal to notice conflicts in an early stage and to solve them.
					Dialogue: collaboration	Dialogue: talked about collaboration, how we want to
					Selection partly based on collaboration	
						Creer goede mindset
	Appreciate the work of the ON, don't only focus on things that go wrong			Appreciate work of contractor		
				Project location	Gezamenlijke projectlocatie.	
					Fysieke afstand kon/moest beter	
Incentives to motivate behaviour, although it would only work in combination with soft factors, and it can invite strategic behaviour.					Verschillende 'werelden' markt <=> overheid zijn soms moeilijk te begrijpen voor elkaar (positief was de interventie op samenwerking)	
Keep things professional, not personal, agree on this beforehand. Discuss matters that you need to discuss		Encourage behaviour based on trust rather than adversarial models. This is done by having a professional relation, based on cooperation and mutual understanding				
		Practice the appropriate attitude yourself, this will assist the promotion of a positive and constructive relationship.				

Figure 28: Example Analysis

It was noticed that several interventions influence different factors, indicating that there is a correlation between them. From this list of interventions, the ones that were used during a project with little to no conflicts or were suggested by literature were selected. Furthermore, the interventions that were considered lessons learned (resulting from the evaluations) and those that were used by different sources were selected as well.

For each of the selected interventions, based on the insight of the researcher it was stated which sub-factor they influence and in which stage (prevention or during disagreement) they should be applied. These interventions were then combined based on their overlap in type of intervention and the sub-factors they influence to create main interventions. The results are given on the next pages, and will be further discussed in chapter 6.

Table 18: Analysis Intervention & Escalation Factors 2

Main-Factors	Attitude and Behaviour		Context		Interest		Phase
	Involved Personalities	Trust	Contract Documents and Procedures	Past Performance	Project Interest	Stakeholder Interest	
Sub-Factor	Involved Personalities		Communication Procedures		Impact		Before disagreement/conflict
	Honesty		Conflict Escalation Procedure		Financial State Organisation		During Disagreement/Conflict
	Tranparancy		Contract Conditions		Responsibility		
	Understanding		Tender Phase		State of Project		
	Personal "Bond"		Contract Phase		Gov. Org		
	Knowledge of Spirit of Contract		Conflict		Environment		
	Social Skills						
	Experience						
	Workstress						
	Personal Events						
	Personal Interaction						
	Culture						
	Conflict Behaviour						
	Perception of Contract Conditions						
	Career						
Discipline							
Give weight in the award criteria to those products							
There are clear, mutually agreed on procedures and agreements; make the products a shared product after contract close, so that both parties support it							
During the contract phase, from the start, reflect and pay attention to the ongoing collaboration/culture. Keep it an active topic and rather than address it only every once and then.							
Share risk registries, and discuss how you can contribute or assist- with managing each others risks.							
Have shared training (or other) sessions							
Celebrate successes							
Appreciate good work of the contractor, and let them know.							

Table 21: Analysis Intervention & Escalation Factors 5

Categories			Attitude and Behaviour												Context			Interest			Phase
Main-Factors			Requirements for Cooperative Interaction												Influence			Drivers			Phase
Sub-Factor			Involvement	Trust	Continuity	Competences	Personal Circumstances	Atmosphere	Personal Conflict Approach	Personal Interest	Contract Documents and Procedures	Past Performance	Project Interest	Stakeholder Interest	Before disagreement/conflict	During Disagreement/Conflict					
<i>Parties act in the spirit of the contract</i>																					
<i>Objectively look at who is responsible</i>																					
<i>Awareness of objectives and interests of the other party</i>																					
Discuss during the dialogue phase the interests and objectives of both the client and contractor.																					
At project startup, place the interests and objectives of both parties on the agenda.																					
Make sure that during the contract phases everyone stays aware of these																					
Keep in the decision making the interests and objectives of both parties in mind.																					
Base your decision making on the weight of the different interests: if the solution for the contractor would significantly impact their interests, while it would be of little to none consequence for the client, then a better solution could be sought.																					
Look for opportunities to strengthen each other, by considering the interests of the other party, even if it is not directly related to your own.																					
<i>Client and governmental stakeholders follow the same line</i>																					
Manage the expectations of the stakeholders																					
Make it insightful what the trade-off of decisions/wishes is, to allow for a rational decision to be made																					
Be clear beforehand what the result will be like																					
Have a shared opinion before talking to the contractor, to prevent confusion, or the contractor making use of the contradicting opinions.																					

Appendix I:

Validation Survey

The escalation factors found in 3.4.2 Conflict Escalation Factors need to be validated to be able to answer the research question of which factors play a part in the escalation process.

I.1. Goal

The aim of the validation survey is to get an indication of the impact of the different sub-factors so that it can be determined if according to the practice the factors play a relevant part in the escalation process. This will validate the formulated factors in this research.

I.2. Respondents

This will be done by means of a survey among different professionals with experience in integrated contracts during the DB-Phase. A group of around 40 will be selected and requested to participate in the survey based on these criteria.

I.3. Protocol

The factors will be questioned on sub-factor level, and the factors will be formulated in the form of a question of their impact based on an example. The examples are based on what has been heard during the interviews to make sure that it matches the reality as much as possible.

The interviewees will be asked to give an answer for the impact of the questioned factor on the scale of 1 (limited impact) to 5 (significant impact), furthermore they will have to option to indicate that the factor does not play a role. It was considered and rejected to only give 3 options, namely yes, no and perhaps, however this would be black and white, and might force people into choice for something they do not fully agree with. The scale will allow to gain a better perception of the opinion of the surveyed.

At the end of the survey the option will be given to comment on the questions in case things are unclear, or if factors were not included in the survey.

I.4. Analysis

The goal of the survey is to validate the formulated factors of this research. It is not to determine the relative impact of factors compared to each other. Only an indication can be obtained from the relative important as the survey was not structured to achieve the relative importance.

There are two elements that will be analysed, the mean of the impact scores, which tells if the surveyed find the factor relevant, and the distribution of the answers. This will be done graphically and no statistical analysis will be used.






I.4. Questions and Results

Of the 41 that were approach to participate in the survey, 25 participated in the survey. Three of the approached persons did in the end not meet the criteria, and therefore have not participated in the survey. The respondents were 18 project managers, 6 contract manager and 1 mediator.

The following questions have been asked, and the accompanying result is given. As the survey was done in Dutch, so were the questions.

Persoonlijke belangen



**Wat is de mate van invloed op de escal...
dat mensen handelen vanuit het belang van hun discipline, en niet vanuit het algehele
project belang? (Weinig - Veel)**

1		3 (12 %)
2		1 (4 %)
3		2 (8 %)
4		13 (52 %)
5		6 (24 %)
dat mensen handelen vanuit het belang van hun discipline, en niet vanuit het algehele project belang? (n.v.t.)		0 (0 %)

n = 25
25

Persoonlijke belangen

**Wat is de mate van invloed op de escal...
dat mensen handelen vanuit het belang voor hun eigen carrière, waardoor ze willen
"scoren" tijdens het conflict, zodat hun kant "wint" en wat uiteindelijk moet bijdragen
aan hun eigen carrière. (Weinig - Veel)**







1		2 (8 %)
2		2 (8 %)
3		5 (20 %)
4		10 (40 %)
5		6 (24 %)
dat mensen handelen vanuit het belang voor hun eigen carrière, waardoor ze willen "scoren" tijdens het conflict, zodat hun kant "wint" en wat uiteindelijk moet bijdragen aan hun eigen carrière. (n.v.t.)		0 (0 %)

n = 25
25

Competenties

Wat is de mate van invloed op de escalatie...

dat een of meerdere van de betrokken personen weinig ervaring hebben, waardoor er wrijving ontstaat door hun aanpak van de situatie. (Weinig - Veel)




1		1 (4 %)
2		5 (20 %)
3		1 (4 %)
4		12 (48 %)
5		6 (24 %)
dat een of meerdere van de betrokken personen weinig ervaring hebben, waardoor er wrijving ontstaat door hun aanpak van de situatie. (n.v.t.)		1 (4 %)

n = 25
26

Competenties

Wat is de mate van invloed op de escalatie...

dat er vanuit de eisen van het contract wordt gedacht, en niet vanuit de bedoeling achter de eisen. (Weinig - Veel)






1		0 (0 %)
2		0 (0 %)
3		5 (20 %)
4		7 (28 %)
5		13 (52 %)
dat er vanuit de eisen van het contract wordt gedacht, en niet vanuit de bedoeling achter de eisen. (n.v.t.)		0 (0 %)

n = 25
25

Competenties

Wat is de mate van invloed op de escalatie...






dat door slechte sociale vaardigheden van een of meerdere betrokken personen, er wrijving ontstaat tussen de betrokkenen. (Weinig - Veel)

1		1 (4 %)
2		2 (8 %)
3		4 (16 %)
4		8 (32 %)
5		10 (40 %)
dat door slechte sociale vaardigheden van een of meerdere betrokken personen, er wrijving ontstaat tussen de betrokkenen. (n.v.t.)		0 (0 %)

n = 25
25

Persoonlijke omstandigheden







**Wat is de mate van invloed op de...
dat door persoonlijke gebeurtenissen iemand anders in zijn vel zit, wat voor wrijving zorgt. (Weinig - Veel)**

1		4 (16 %)
2		4 (16 %)
3		9 (36 %)
4		6 (24 %)
5		1 (4 %)
dat door persoonlijke gebeurtenissen iemand anders in zijn vel zit, wat voor wrijving zorgt. (n.v.t.)		2 (8 %)

n = 25
26

Persoonlijke omstandigheden







**Wat is de mate van invloed op de...
dat door werkstress iemand anders in zijn vel zit, wat voor wrijving zorgt. (Weinig - Veel)**

1		0 (0 %)
2		2 (8 %)
3		7 (28 %)
4		14 (56 %)
5		2 (8 %)
dat door werkstress iemand anders in zijn vel zit, wat voor wrijving zorgt. (n.v.t.)		0 (0 %)

n = 25
25

Persoonlijkheid

**Wat is de mate van invloed op de escalatie.....
dat een of meerdere van de betrokken personen het niet erg vinden om een conflict te hebben. (Weinig - Veel)**

1		4 (16 %)
2		7 (28 %)
3		5 (20 %)
4		9 (36 %)
5		0 (0 %)
dat een of meerdere van de betrokken personen het niet erg vinden om een conflict te hebben. (n.v.t.)		2 (8 %)

n = 25
27

Persoonlijkheid

Wat is de mate van invloed op de escalatie.....

dat de karakters van de betrokken personen met elkaar botsen, en dat ze daardoor niet met elkaar kunnen opschieten. (Weinig - Veel)

1		0 (0 %)
2	█	5 (20 %)
3	█	5 (20 %)
4	█	11 (44 %)
5	█	3 (12 %)
dat de karakters van de betrokken personen met elkaar botsen, en dat ze daardoor niet met elkaar kunnen opschieten. (n.v.t.)	█	1 (4 %)

n = 25
25

Atmosfeer

Wat is de mate van invloed op de escalatie...

dat er een competitieve cultuur heerst in het project, waardoor partijen voornamelijk uitgaan van hun eigen belang, en niet het belang van de andere partij in overweging nemen. (Weinig - Veel)

1	█	1 (4 %)
2	█	3 (12 %)
3	█	1 (4 %)
4	█	10 (40 %)
5	█	10 (40 %)
dat er een competitieve cultuur heerst in het project, waardoor partijen voornamelijk uitgaan van hun eigen belang, en niet het belang van de andere partij in overweging nemen. (n.v.t.)	█	0 (0 %)

n = 25
25

Atmosfeer

Wat is de mate van invloed op de escalatie...

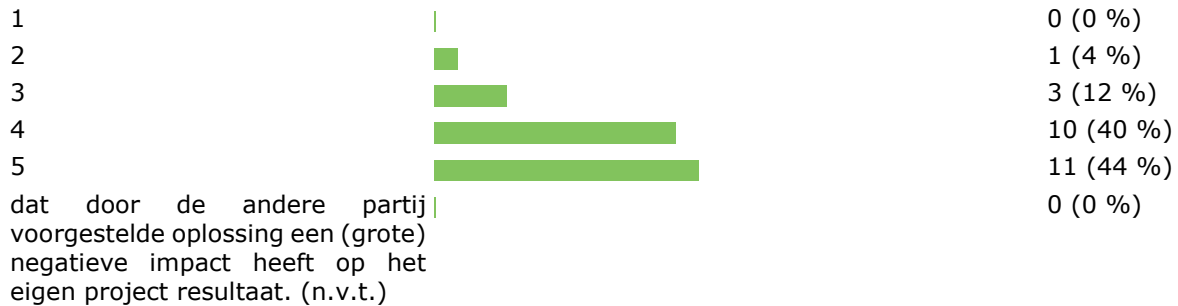
dat de interactie tussen de betrokken personen onvriendelijk is, ze zijn niet "on speaking terms". (Weinig - Veel)

1		0 (0 %)
2	█	3 (12 %)
3	█	3 (12 %)
4	█	11 (44 %)
5	█	7 (28 %)
dat de interactie tussen de betrokken personen onvriendelijk is, ze zijn niet "on speaking terms". (n.v.t.)	█	1 (4 %)

n = 25
25

Project Belangen

**Wat is de mate van invloed op de escalatie....
dat door de andere partij voorgestelde oplossing een (grote) negatieve impact heeft op
het eigen project resultaat. (Weinig - Veel)**



n = 25
25

Project Belangen

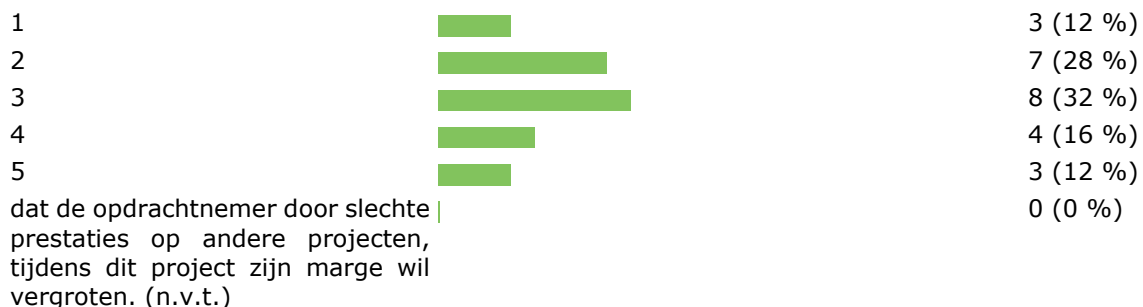
**Wat is de mate van invloed op de escalatie....
dat beide partijen elkaar verantwoordelijk houden voor de oorzaak van het
meningsverschil. (Weinig - Veel)**



n = 25
25

Project Belangen

**Wat is de mate van invloed op de escalatie....
dat de opdrachtnemer door slechte prestaties op andere projecten, tijdens dit project
zijn marge wil vergroten. (Weinig - Veel)**



n = 25
25

Project Belangen

**Wat is de mate van invloed op de escalatie...
dat doordat de kosten hoger uitvallen dan eerder geraamd, het project onder druk staat, waardoor het verlies moet worden goed gemaakt/beperkt. (Weinig - Veel)**

1		0 (0 %)
2	█	1 (4 %)
3	█	2 (8 %)
4	████████████████████	15 (60 %)
5	██████████	7 (28 %)
dat doordat de kosten hoger uitvallen dan eerder geraamd, het project onder druk staat, waardoor het verlies moet worden goed gemaakt/beperkt. (n.v.t.)		0 (0 %)

n = 25
25

Stakeholder Belangen

**Wat is de mate van invloed op de escala...
dat andere betrokken overheidsinstanties (rijksgebouwenmeester, V&J, etc.) voorwaarden stellen aan de oplossing voor het meningsverschil, wat de mogelijkheden beperkt. (Weinig - Veel)**

1	█	3 (12 %)
2	█	4 (16 %)
3	████████████████████	12 (48 %)
4	██████████	6 (24 %)
5		0 (0 %)
dat andere betrokken overheidsinstanties (rijksgebouwenmeester, V&J, etc.) voorwaarden stellen aan de oplossing voor het meningsverschil, wat de mogelijkheden beperkt. (n.v.t.)		0 (0 %)

n = 25
25

Stakeholder Belangen

**Wat is de mate van invloed op de escala...
dat omgevings-stakeholders voorwaarden stellen, wat de oplossingsruimte beperkt. (Weinig - Veel)**

1	█	2 (8 %)
2	██████████	7 (28 %)
3	████████████████	10 (40 %)
4	██████████	6 (24 %)
5		0 (0 %)
dat omgevings-stakeholders voorwaarden stellen, wat de oplossingsruimte beperkt. (n.v.t.)		0 (0 %)

n = 25
25

Vertrouwen

**Wat is de mate van invloed op de escalatie...
dat alleen wanneer het echt noodzakelijk is, informatie wordt gedeeld tussen de
partijen (transparantie/openheid). (Weinig - Veel)**

1		0 (0 %)
2	■	3 (12 %)
3	■	4 (16 %)
4	■	10 (40 %)
5	■	7 (28 %)
dat alleen wanneer het echt noodzakelijk is, informatie wordt gedeeld tussen de partijen (transparantie/openheid). (n.v.t.)	■	1 (4 %)

n = 25
25

Vertrouwen

**Wat is de mate van invloed op de escalatie...
dat partijen elkaars besluiten/proces niet begrijpen (begrip). (Weinig - Veel)**

1	■	1 (4 %)
2	■	1 (4 %)
3	■	5 (20 %)
4	■	7 (28 %)
5	■	11 (44 %)
dat partijen elkaars besluiten/proces niet begrijpen (begrip). (n.v.t.)	■	0 (0 %)

n = 25
25

Vertrouwen

**Wat is de mate van invloed op de escalatie...
dat er twijfel is over de eerlijkheid van het handelen van de andere partij. (Weinig -
Veel)**







1	■	1 (4 %)
2	■	1 (4 %)
3	■	4 (16 %)
4	■	11 (44 %)
5	■	8 (32 %)
dat er twijfel is over de eerlijkheid van het handelen van de andere partij. (n.v.t.)	■	0 (0 %)

n = 25
25

Continuïteit

Wat is de mate van invloed op de escalatie...

dat er geen persoonlijke band kan worden opgebouwd tussen mensen van de ON/OG door wijzigingen in de teams, wat de relatie tussen de partijen beïnvloed. (Weinig - Veel)







1		1 (4 %)
2		4 (16 %)
3		4 (16 %)
4		10 (40 %)
5		5 (20 %)
dat er geen persoonlijke band kan worden opgebouwd tussen mensen van de ON/OG door wijzigingen in de teams, wat de relatie tussen de partijen beïnvloed. (n.v.t.)		2 (8 %)

n = 25
26

Continuïteit

Wat is de mate van invloed op de escalatie...

dat door veranderingen in de team samenstelling de "geest van de afspraak" wordt vergeten, waardoor er eerder wordt teruggegrepen naar het contract. (Weinig - Veel)

1		1 (4 %)
2		5 (20 %)
3		2 (8 %)
4		8 (32 %)
5		8 (32 %)
dat door veranderingen in de team samenstelling de "geest van de afspraak" wordt vergeten, waardoor er eerder wordt teruggegrepen naar het contract. (n.v.t.)		1 (4 %)

n = 25
25

Past Performance

Wat is de mate van invloed op de escalatie....

dat in de tender fase, weinig tot geen aandacht is besteed aan de samenwerking/omgaan met meningsverschillen. (Weinig - Veel)

1		2 (8 %)
2		4 (16 %)
3		7 (28 %)
4		5 (20 %)
5		7 (28 %)
dat in de tender fase, weinig tot geen aandacht is besteed aan de samenwerking/omgaan met meningsverschillen. (n.v.t.)		0 (0 %)

n = 25
25

Past Performance

**Wat is de mate van invloed op de escalatie....
dat tijdens het project al een aantal situaties zijn geweest die moeizaam zijn opgelost.
(Weinig - Veel)**

1		0 (0 %)
2	■	1 (4 %)
3	■■■■■■■■■■	10 (40 %)
4	■■■■■■■■■	9 (36 %)
5	■■■■■	5 (20 %)
dat tijdens het project al een aantal situaties zijn geweest die moeizaam zijn opgelost. (n.v.t.)		0 (0 %)

n = 25
25

Past Performance

**Wat is de mate van invloed op de escalatie....
dat de manier waarop een van de partijen omgaat met het meningsverschil voor
wantrouwen/wrijving zorgt. (Weinig - Veel)**

1		0 (0 %)
2		0 (0 %)
3	■■■■■	6 (24 %)
4	■■■■■■■■■■■■■■■■■■■■	15 (60 %)
5	■■■■■	4 (16 %)
dat de manier waarop een van de partijen omgaat met het meningsverschil voor wantrouwen/wrijving zorgt. (n.v.t.)		0 (0 %)

n = 25
25

Contract Documenten en Procedures

**Wat is de mate van invloed...
dat de communicatie tussen de partijen niet goed geregeld is. (Weinig - Veel)**

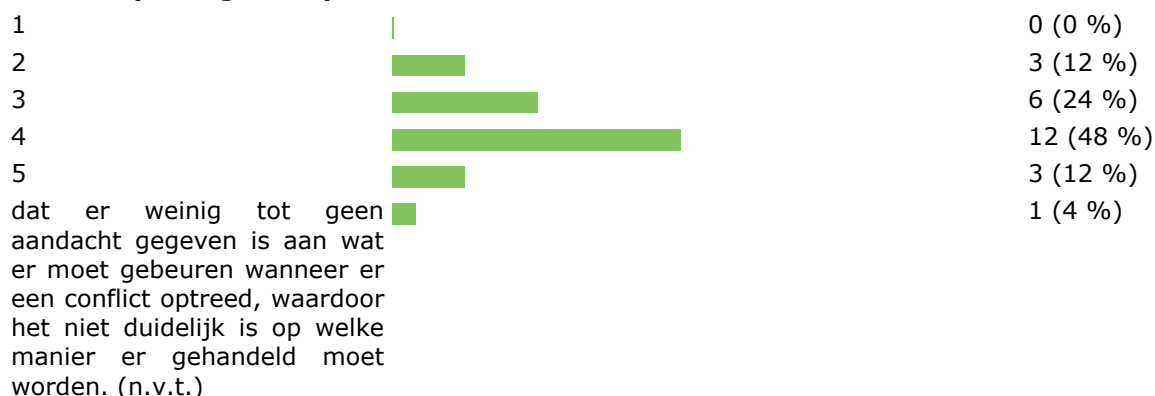
1	■	1 (4 %)
2	■■■	3 (12 %)
3	■■■	3 (12 %)
4	■■■■■■■■■■■■■■■■■■■■	12 (48 %)
5	■■■■■	6 (24 %)
dat de communicatie tussen de partijen niet goed geregeld is. (n.v.t.)	■	1 (4 %)

n = 25
26

Contract Documenten en Procedures

**Wat is de mate van invloed...
dat er weinig tot geen aandacht gegeven is aan wat er moet gebeuren wanneer er een**

conflict optreed, waardoor het niet duidelijk is op welke manier er gehandeld moet worden. (Weinig - Veel)



n = 25
25

Contract Documenten en Procedures

Wat is de mate van invloed...

dat de contract voorwaarden worden beschouwd als onrechtvaardig, waardoor een van de partijen zich voelt benadeeld. (Weinig - Veel)



n = 24
24

The conclusions of the survey are given in chapter 0.

Appendix J:

Validation Interviews

J.1. Goal

The aim of the interviews is to validate the results of this research. Besides the escalation factors, which are validated by means of a survey, the results consist of the models formulated in chapter 3, 4 and 5 including the underlying assumptions. Furthermore, for the identified interventions it will need to be determined if according to the interviewees they will contribute to preventing the escalation of a disagreement to conflict.

J.2. Interviewees

For the validation interviews, three project managers and one technical manager were interviewed. Each with experience of the pre-contract and DB-phases of integrated contracts, and who have been involved in several projects with an integrated contract.

J.3. Interview Questions

Explanation of goal of the research, and that it is from the perspective of contract management. Four models were questioned:

Section	Figure and Name
3.4	Figure 16: Conflict Escalation Model
3.4.1	Figure 13: Team(member) Conflicts
5.4	Figure 21: Role Escalation
3.4.2	Figure 14: Escalation Factor Framework

The underlying assumptions for the models as described in the text were questioned to see if they match the everyday practice.

Intervention/Prevention

Statements:

Cooperative interaction is required to prevent dysfunctional conflicts and reduce the negative effects on the relationship during interest driven conflicts.

Collaboration/cooperative interaction can be defined as followed:

- *Collaboration is working towards a common goal while considering each other's interests and objectives, by thinking along with the other party and facilitating their (problem solution) process, without taking the other's responsibility.*

To create cooperative interaction the following main interventions need to be done (and comment on them if no/perhaps)

#	Main Intervention	Yes	No	Perhaps
	No friction between involved individuals on a personal level.			
	Have the (mixture) right people in both teams.			
	Not “we vs them”, but “we together” culture.			
	There is trust between the parties.			
	The contract terms are considered fair.			
	Continuity is ensured.			
	Have a common goal.			
	Long term effects of actions are taken into account.			

To deal with interest the following main interventions need to be done (and comment on them if no/perhaps)

#	Main Intervention	Yes	No	Perhaps
	Issues are being kept small, with a limited impact on parties’ objectives and interests.			
	Objectively look at who is responsible			
	Parties act in the spirit of the contract			
	Awareness of objectives and interests of the other party			
	Client and governmental stakeholders follow the same line			

- Are any main interventions missing from the list?

Furthermore, the sub-interventions as listed in section 6.4.3 were questioned in the same way as the main intervention.

Survey Results

Several results from the survey that stand out are questioned.

There are a couple of sub-factors that stand out, which will need to be questioned in the second part of the validation. The continuity sub-factors score around average, while in several interviews this factor was mentioned to have significant impact on the ability to act in the spirit of the contract and to work with your counterpart. While the competence, to be able act in the spirit of the contract is found to have a significant impact by the surveyed.

While the personal circumstances were thought to have the same effect by the researcher, this is not the case according to the surveyed. The sub-factor work stress is considered more important than the personal events in the life of the individuals.

The effect of the tender phase on the rest of the project is something the surveyed disagree on, the same for the fairness of the contract conditions and the financial state of the organisation. This were also sub-factors that were mentioned in the interviews, and on which there is no shared opinion.

The difference could have to do with how the sub-factor was interpreted by the surveyed, and it would be possible that therefore people’s opinion differed. Furthermore, as mentioned before, the personal experience of the surveyed can differ, causing some to have experienced a certain factor in a conflict situation where it had a significant impact, while others have not experienced this.

J.4. Analysis

Models/Frameworks

The models and frameworks represent the mechanisms for the escalation process as found in this research. The interventions are based on these assumptions and therefore these will need to be checked if it matches with what is going on during actual conflicts. By explaining the different relations and elements of the models/frameworks, and requesting the interviewees to respond on it when they disagree or have doubts, it can be analysed if the correct assumptions are made.

Interventions

The interviewees have three options to respond: yes, no or maybe. Maybe indicated that they have doubts about the intervention, and that it may need to be adjusted before they think it will contribute. If all interviewees agree with the intervention, it is considered validated. When it is a combination of “yes and maybe”, and “yes and no”, it is considered partly validated. In case the responses vary between maybe and no, it is considered not validated.

Depending on the comments received on the interventions, adjustments can be made to the interventions so that they will contribute. This will be context dependent for which interventions this is the case.

J.5. Results

Models/Frameworks

All four the models were validated by the interviewees. There were a few questions which could be answered by the interviewer which was satisfactory.

Furthermore, the following statements were also validated:

- Cooperative interaction is required to prevent dysfunctional conflicts and reduce the negative effects on the relationship during interest driven conflicts.
- Collaboration/cooperative interaction can be defined as followed:
 - o *Collaboration is working towards a common goal while considering each other's interests and objectives, by thinking along with the other party and facilitating their (problem solution) process, without taking the other's responsibility.*

The general concept behind the interventions was agreed upon.

The results of the main and sub interventions can be found on the next pages. The complete result with the individual scores of yes, no, maybe including comments is stored in a separate file.

As for the area of influence for field of contract management. At the beginning over the interview it was explained that the interventions were searched within the area of influence of contract management. In the framework “Role Escalation” this was reiterated, and the question was raised about when contract management would be involved. It was stated that the interaction between the parties in situations like this within the area of influence of contract management, even if the role is called differently.

For the interventions, it was not mentioned that a certain intervention was not part of contract management, although there are doubts by one interviewee about the stakeholder related interventions. Although it is stated in the literature it is part of contract management.

The interventions listed in these tables are sorted on the previous way, since then several adjustments were made in the main text, however, this has no consequence on the validation of the interventions as the interventions themselves did not change.

Table 23: Validation Cooperative Interaction Interventions

Cooperative Interaction	Validation
<i>Work to avoid friction on a personal level between the involved individuals, signal it at an early stage, and handle it as soon as possible.</i>	Validated
Invest in the informal relation between those involved.	Validated
Check-in's during meetings, where the question is raised how it is going with people, and if there is anything troubling them.	Validated
External observer reflecting on what transpires during a meeting.	Partly Supported
Have appointed team members from both ON/OG reflect on the interaction between both parties.	Validated
Have project team members follow feedback and conflict management training	Partly Supported
Make sure that those who interact with the other party have adequate social skills.	Validated
Be aware of what type of personality the key players are.	Validated
Work on the same project location	Partly Supported, it need to be included that both teams should work in seperate rooms/buildings.
Mention it when something bothers you, do not keep it to yourself and let it affect your judgement	Validated, needs to happen in the right setting/timing.
At project start up, formulated shared values, and let people during the project know when they do not act according to those.	Validated
<i>Have the right (mixture) of people in both teams</i>	Partly Validated
Make sure you have a mixture of personalities in a team, so that a healthy discussion can be had, without opinions getting reinforced.	Partly Validated
Have people with the willingness to act in the spirit of the contract, and the understanding that the decision need to be justifiable.	Validated
Team assessment of both client and contractor	Validated
<i>Create a "we together" and not "we vs them" culture.</i>	<i>Validated</i>
Formulate an ambition as client for the envisioned culture/collaboration before the dialogue phase.	Validated
Discuss this ambition during the dialogue phase	Validated
Request products in the dialogue phase related to the collaboration/ambition that will make the vision on this of the contractor more concrete.	Validated
Give weight in the award criteria to those products	Partly Validated, minimum criteria can be set for the

	products, rather than award criteria.
There are clear, mutually agreed on procedures and agreements, make the products a shared product after contract close, so that both parties support it	Partly Validated, need to be careful that no alternative agreements arise contradicting the contract terms.
During the contract phase, from the start, reflect and pay attention to the ongoing collaboration/culture. Keep it an active topic and rather than address it only every once and then.	Validated
Share risk registries, and discuss how you can contribute or assist with managing each others risks.	Validated
Have shared training (or other) sessions	Validated
<i>There is trust between the parties</i>	<i>Validated</i>
Give the right example in your behaviour, act according to the set of rules you have agreed upon, if you do not do it yourself, you cannot really expect it from the other party	Validated
Dialogue product: make the budget for the quality system of the contractor visible so an indication can be gained about the effort they will put into it.	Partly Validated
Use SCB to monitor the processes of the contractor	Validated
Give substantiation as to how a decision is made, and provide trade-off matrixes so that an informed decision is made	Partly Validated, one interviewee found this really important, another thought this was going to far.
Register what decisions have been made, and what the motivation was for them	Validated
Share information when required, do not hold your cards close to your chest	Validated
Provide insight in your processes, so the other party know what to expect	Validated
“Kijkje in de keuken”, have the contractor give insight in their processes, as how to do the work	Validated
Agreement is agreement, do not come back on them	Partly Validated, need to be added that you need to be able to handle a change when required.
Make clear what is important for the client, and ask what is important for the contractor.	Validated
Reflect on what is transpiring at regular intervals.	Validated
<i>The contract terms are considered fair</i>	<i>Validated</i>
Have a fair discount system	Validated
There should be process agreements about the evaluation of the discount system. This evaluation should be at regular intervals and if a discount has been unjustly given there should be room to discuss this.	Validated
Link payment to satisfactory performance of the contractor, by establishing payment milestones that are linked to the contract.	Validated

Gain support from senior management, that the contractor need to be able to make a profit in the case that they occur losses due to circumstances outside their control.	Validated
<i>Continuity is ensured</i>	Validated
To keep people with the project, make sure that they stay interested in the project.	Validated
Invest in new people to bring them up to speed about the project	Validated (knowledgetransfer)
Express the need for continuity to the contractor and client.	Validated
Make sure that people are involved in different project phases, so that knowledge is preserved when the project enters a new phase. Or that they will be available for questions even after they have left the project.	Validated
<i>Have a common goal.</i>	Validated
Create a shared goal (innovation)	Partly Validated, either interviewees agreed or disagreed
Create a shared goal (collaboration)	Validated
<i>Long terms effects of actions are taken into account</i>	Validated
The past performance, the actions and experience people have from the past, related to the tender, contract and conflict phases, has an influence on how people respond in the present. Being aware of the effect that past actions can have on the present is critical.	Validated

Table 24: Validation Interest Interventions

Interests	Validation
<i>Issues are being kept small with a limited impact on interests and objectives</i>	Rejected, all agreed that while it is correct in essence, it is not possible as you cannot control what happens. It should be reframed to "Parties agree on the content of the issue, it is noticed in an early stage"
Share risk registries, and discuss how you can contribute or assist with managing each others risks.	Validated
Use trade-off matrixes to better understand the possible impact of the solution(s)	Partly validated, should it be shared or not.
Alert each other when potential problems/friction is noticed	Validated
Use SCB not only to monitor based on risks, also interact with the contractor to help them/make them aware of potential issues.	Validated
Escalate a disagreement to a higher level in the organisation when the discussion gets stuck	Validated, as long as it doesnt happen to fast.
Don't avoid issues, deal with them as soon as they are noticed	Validated
Make clear what your interests and objectives are, and ask the same from the contractor	Validated
Keep the long term effect in mind when making decisions	Validated
Limit the number of changes during the contract phase	Partly Validated
<i>Objectively look at who is responsible</i>	Validated
It has a significant impact on the escalation who is held responsible for het cause of the disagreement, especially when both parties hold each other responsible. It can lead to a quick escalation when parties are prejudiced about who should bear the responsibility. By being objective about which party is responsible will prevent this escalation. And even if the other party is responsible, by looking at what you can facilitate without compromising your own interest, the impact can be reduced.	Validated
<i>Parties act in the spirit of the contract</i>	Validated, although you need to ask yourself why it is required, and it was not noticed before
When a disagreement arises between the parties, they can try to resolve it by looking at the contract terms what is written there, or act in the spirit of the terms. This means that they try to find a solution that contributes to the goal for which the term was written, rather than achieving it exactly as stated. This allows for more freedom in finding a solution that could contribute to the interests of both parties, decreasing the escalation drive of divergent interests.	Partly validated, how DBFMO contracts are written at this moment makes it complicated
<i>Awareness of objectives and interests of the other party</i>	Validated
Discuss during the dialogue phase the interests and objectives of both the client and contractor.	Validated
At project startup, place the interests and objectives of both parties on the agenda.	Validated

Keep in the decision making the interests and objectives of both parties in mind. Base your decision making on the weight of the different interests. If the solution for het contractor would significantly impact their intersts, while it wouldb e of little to none consequence for the client, then a better solution could be sought.	Validated
Make sure that during the contract phases everyone stays aware of these	Validated
Look for opportunities to strengthen each other, by considering the interests of the other party, even if it is not directly related to your own.	Validated
<i>Client and governmental stakeholders follow the same line</i>	Validated
Manage the expectations of the stakeholders	Partly Validated
Make it insightful what the trade-off of decisions/wishes is, to allow for a rational decision to be made	Partly Validated
Be clear beforehand what the result will be like	Partly Validated
Have a shared opinion before talking to the contractor, to prevent confusion, or the contractor making use of the contradicting opinions.	Partly Validated

Table 25: Validation General Interventions

General Interventions	Validation
Do not overlook problems for the sake of the relation	Validated
Allocate the risks to the party being best able to manage them	Validated
Provide positive and constructive feedback	validated
Get an (external) objective person involved when things are stuck	Partly Validated
Make clear agreements when and who will intervene when people are stuck in their view of the situation.	Validated
Deal with issues per situation, do not combine several issues in one discussion	Partly Validated
Respect each other	Validated
Keep this professional and not personal	Validated
Keep communicating, whatever happens	Validated
Focus on trying to understand the situation	Validated
Follow the procedures when dealing with an issue, do not make informal decisions	Validated
Make it clear why you want certain information of the other party, do not meaningless request products	Validated
Do not enforce something on the other, as it would likely come back at a later stage	Validated
Be consistent in your actions, be predictable for the other party	Validated
Celebrate successes	Validated
Appreciate good work of the contractor, and let them know.	Validated
Discuss the responsibilities of the different team members with the other party, and make clear work agreements for procedures that are often used.	Validated
Only discuss matters in one project layer at the same moment	Validated

Survey Factors

Due to time constraints during the interviews, only with two of the four interviewees this topic was discussed.

The continuity sub-factors score around average, while in several interviews this factor was mentioned to have significant impact on the ability to act in the spirit of the contract and to work with your counterpart. While the competence, to be able act in the spirit of the contract is found to have a significant impact by the surveyed.

This can have to do with the perception of both factors. While to some continuity is a key requirement to be able to act in the spirit of the contract, it might not to others. Having a good transfer of knowledge could handle the knowledge loss because of continuity. Having the skill/competence/character aspect that one is willing to act based on the spirit is in that case more important.

While the personal circumstances were thought to have the same effect by the researcher, this is not the case according to the surveyed. The sub-factor work stress is considered more important than the personal events in the life of the individuals.

It is suspected that in the answers people scored them relatively to the other, explaining why work stress is deemed to have a great impact. Furthermore, the survey question for personal events was not framed that well. It was left in the open what type of personal events were referred too, and it could also have been “positive” events. Moreover, work stress is more recognisable for the

The effect of the tender phase on the rest of the project is something the surveyed disagree on, the same for the fairness of the contract conditions and the financial state of the organisation. This were also sub-factors that were mentioned in the interviews, and on which there is no shared opinion.

The interviewees were surprised about this, as they had ranked those factors higher than the average. No explanation was found other than that it could have to do with the experience of people, or the perception of what plays a part. Furthermore, it was stated that several survey questions required some thinking to find out what was searched for, which could also have played a role in the spread of the answers.

J.6. Adjusted Intervention List

Based on the validation interviews, several adjustments can be made to the interventions.

1. Work to avoid friction on a personal level between the involved individuals, signal, and deal with it as soon as possible.
 - Invest in the informal relation between those involved.
 - Check-in during meetings, where the question is raised on how it is going with people, and if there is anything troubling them.
 - Have an external observer reflecting on what transpires during a meeting.
 - Have appointed team members from both ON/OG reflect on the interaction between both parties.
 - Have project team members follow feedback and conflict management training.
 - Make sure that those who interact with the other party have adequate social skills.
 - Be aware of what type of personality the key players are.
 - Work on the same project location, although in separate rooms/buildings.

- Mention it when something bothers you, do not keep it to yourself and let it affect your judgement (in the right time and setting).
 - Follow-up on this.
- At project start up, formulate shared values, and let people during the project know when they do not act according to those.
- Provide positive and constructive feedback
- Keep things professional and do not let it become personal.
- Make it clear what the reason is when information is requested from the other party, and prevent meaningless (information) requests.
- Respect each other.

2. Have the right (mixture) of people in both teams

The importance of having qualified team members in both the teams of the contractor as the client was often mentioned. Those that interact with the other party need to have adequate social skills, a willingness to act in the spirit of the contract and a mixture of personalities needs to be present in the teams to allow for a healthy discussion. Lastly, a team assessment of both client and contractor could be done when the interaction is not running smoothly.

At this moment, there are no interventions that will allow the client to select the team members of the contractor, all that can be done is expressing the need for selecting people with the right personalities and competences. Therefore, this intervention is only partly in the field of contract management.

3. Create a “we together” and not “we vs them” culture.

- Formulate an ambition as client for the envisioned culture/collaboration before the dialogue phase.
 - Create a shared goal (collaboration).
 - Create a shared goal (innovation).
 - Discuss this ambition during the dialogue phase.
 - Request products in the dialogue phase related to the collaboration/ambition that will make the vision of the contractor on this more concrete.
 - Give weight in the award criteria to those products.
 - Or set a high minimum requirement for certain products.
- There are clear, mutually agreed on procedures and agreements, make the products a shared product after contract close, so that both parties support it
- During the contract phase, from the start, reflect and pay attention to the ongoing collaboration/culture and keep it an active topic.
- Share risk registries, and discuss how you can contribute or assist with managing each other’s risks.
- Have shared training (or other) sessions.
- Celebrate successes.

4. Appreciate good work of the contractor, and let them know.

Create trust between the parties

- Give the right example in your behaviour, act according to the set of rules you have agreed upon, if you do not do it yourself, you cannot expect it from the other party.
- Dialogue product: make the budget for the quality system of the contractor available, so an indication can be gained about the effort they will put into it.
- Use SCB to monitor the processes of the contractor
- Give substantiation as to how a decision is made, and provide trade-off matrixes so that an informed decision is made
- Register what decisions have been made, and what the motivation was for them

- Share information when required, do not hold your cards close to your chest
- Provide insight in your processes, so the other party know what to expect
- “Kijkje in de keuken,” have the contractor give insight in their processes, as how to do the work
- Agreement is agreement, do not come back on them. Although, you need to be flexible enough to handle changes when required.
- Make clear what is important for the client, and ask what is important for the contractor.

5. Have contract terms that are considered fair

- Have a fair discount system
- There should be process agreements about the evaluation of the discount system. This evaluation should be at regular intervals and if a discount has been unjustly given there should be room to discuss this.
- Link payments to satisfactory performance of the contractor, by establishing payment milestones that are linked to the contract.
- Gain support from senior management, that the contractor needs to be able to make a profit in the case that they occur losses due to circumstances outside their control.

6. Ensure the continuity within the project team

- To keep people with the project, make sure that they stay interested in the project.
- Invest in new people to bring them up to speed about the project
- Express the need for continuity to the contractor and client.
- Make sure that people are involved in different project phases, so that knowledge is preserved when the project enters a new phase. Or that they will be available for questions even after they have left the project.

7. Consider the long-term effects of actions

The past performance, the actions and experience people have from the past, related to the tender, contract, and conflict phases, has an influence on how people respond in the present. Being aware of the effect that past actions can have on the present is critical.

8. Keep issues small with a limited impact on interests and objectives of both parties by agreeing on the content of the issue, and noticing and dealing with issues in an early stage.
 - Alert each other when potential problems/friction is noticed
 - Use SCB not only to monitor based on risks, also interact with the contractor to help them/make them aware of potential issues.
 - Do not avoid issues, deal with them as soon as they are noticed
 - Make clear what your interests and objectives are, and ask the same from the contractor
 - Limit the number of changes during the contract phase
 - Allocate the risks to the party being best able to manage them

9. Objectively look at who is responsible

It has a significant impact on the escalation who is held responsible for the cause of the disagreement, especially when both parties hold each other responsible. It can lead to a quick escalation when parties are prejudiced about who should bear the responsibility. By being objective about who is responsible will prevent this escalation. And even though the other party is responsible, by looking at what you can facilitate without compromising your own interests, the impact can be reduced.

10. Act in the spirit of the contract

When a disagreement arises between the parties, they can try to resolve it by looking at what is written in the contract terms. Another approach is to act in the spirit of said terms. This means that a solution is found within the solution space that was thought off when written down the contract term. If the new solution falls within this solution space there should not be any problem. This allows for

more freedom in finding a solution that could contribute to the interests of both parties, decreasing the escalation drive of divergent interests.

11. Awareness of the objectives and interests of the other party

- Discuss during the dialogue phase the interests and objectives of both the client and contractor.
- At project start-up, place the interests and objectives of both parties on the agenda.
 - Make sure that during the contract phases everyone stays aware of these.
- Keep in the decision making the interests and objectives of both parties in mind. Base your decision making on the weight of the different interests. If the solution for the contractor would significantly impact their interests, while it would be of little to none consequence for the client, then a better solution could be sought.
- Look for opportunities to strengthen each other, by considering the interests of the other party, even if it is not directly related to your own side.

12. Ensure that the client and the (governmental) stakeholders follow the same line

- Manage the expectations of the stakeholders.
- Make it insightful what the trade-off of decisions/wishes is, to allow for a rational decision to be made.
- Show the stakeholders what the result will be like.
- Have a shared opinion before talking to the contractor to prevent confusion or the contractor making use of the contradicting opinions.

13. Make clear agreements with your own team and the contractor on how disagreements and conflicts will be managed

- Do not overlook problems for the sake of the relation.
- Get an (external) objective person involved when the discussion is stuck.
- Make clear agreements when and who will intervene when people are stuck in their view of the situation.
- Deal with issues per situation, do not combine several issues in one discussion.
- Keep communicating, whatever happens.
- Focus on trying to understand the situation.
- Follow the procedures when dealing with an issue, do not make informal decisions.
- Do not enforce something on the other party, as it would likely come back at a later stage.
- Be consistent in your actions, be predictable for the other party.
- Discuss the responsibilities of the different team members with the other party, and make clear work agreements for procedures that are often used.
- Only discuss matters in one project layer at the same moment.
- Escalate a disagreement to a higher level in the organisation when the discussion gets stuck.