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<th><strong>Platform for the Support of Collaborative Work (PSCW)</strong></th>
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<tbody>
<tr>
<td>Author:</td>
<td>S.V. Dzenisenka, S. Velickov, D.P. Solomatine</td>
</tr>
<tr>
<td>Institute:</td>
<td>IHE-Delft</td>
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<tr>
<td>Date:</td>
<td><strong>June 2003</strong></td>
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Abstract

According to the long-term ambition of Delft Cluster, and the approved Research Programme, Delft Cluster as a networked organisation needs to establish a common Corporate Knowledge Platform (CKP). The ultimate goal of the DC CKP is that of providing immediate access to a range of available (tacit and explicit) knowledge, resources and applications (products of all DC themes and basis projects) and knowledge sharing and collaborative working facilities (including communities of practice) on a corporate DC level.

In this connection the platform supporting the collaborative work of researchers from different projects is necessary. One of such tools, the BSCW platform (Basic Support for Collaborative Work) has a history of successful use around the world (NASA, commercial companies, Universities like Twente and Rotterdam etc.). It has been also successfully tested in DC as a tool supporting some of these activities and in the framework of this project will be installed on a powerful server and professionally maintained.

This main objective of this project is to set-up, maintain and tune the Platform for Supporting Collaborative Work (PSCW) on the basis of BSCW software developed by the GMD (German National Research Center for Information Technology). This software is a flexible to allow both top-down and bottom-up approaches in supporting collaboration. In this respect it is an important complement to the IntraDC system (i.intranet), that follows the top-down approach of i vertical i organisations, geared towards the top-level management, The role of PSCW is to help researchers involved in individual projects. Organizational and conceptual integration with the IntraDC will of course be established.

The long-term objective of the project is to enable further improvement and development of the corporate knowledge platform (2nd phase of the DC programme in 2003-2007) by testing one of the important packages in this area (BSCW) in real-life environment of project activities. This will allow specifying and designing the parameters for the collaboration components of the final platform.

The project activities were oriented towards setting up and maintaining the platform as a 'back-office' process. The result is an efficient and reliable service that will enhance the communication and collaboration between the members of individual DC projects. The main features include:

- non-redundant reliable workspace on a server available across any Internet connection (pure HTTP protocol through port 80)
- document management system with the ability of any project leader to have full control over the allocated workspace and the flexible system of access rights
- user management system
- flexible discussion space with the possibility to upload accompanying documents
- facility to plan events with the automatic notification by email of all members of the project
- possibilities to create communities
- qualified support of the Computer group and the IT specialist allocated for this task
- high-end computer (RAID5 enabled, hot swappable disks) with the reliable fast Internet connection (SURF) and every-day backups of the hard disk

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Executive Summary

A platform supporting the collaborative work of researchers from different projects was found to be a necessary tool. One of such tools, the BSCW (Basic Support for Collaborative Work) platform developed by the GMD, German National Research Center for Information Technology has a history of successful use around the world (NASA, commercial companies, Universities like Twente and Rotterdam etc.). It has been also successfully tested in DC as a tool supporting some of these activities and in the framework of this project will be installed on a powerful server and professionally maintained.

This main objective of this project is to set-up, maintain and tune the Platform for Supporting Collaborative Work (PSCW) on the basis of BSCW software. This software is a flexible to allow both top-down and bottom-up approaches in supporting collaboration. In this respect it is an important complement to the IntraDC system (i.intraneti), that follows the top-down approach of i.verticali organisations, geared towards the top-level management. The role of PSCW is to help researchers involved in individual projects. Organizational and conceptual integration with the IntraDC will of course be established.

The long-term objective of the project is to enable further improvement and development of the corporate knowledge platform (2nd phase of the DC programme in 2003-2007) by testing one of the important packages in this area (BSCW) in real-life environment of project activities. This will allow specifying and designing the parameters for the collaboration components of the final platform.

The platform was seen as a 'back-office' process to ensure an efficient and reliable service that will enhance the communication and collaboration between the members of individual DC projects. All this ensured the reliable and efficient operation of the platform and the proper support for DC project activities.

The project was executed in close cooperation with the Project 07.03.01 "Collaborative working in DC: Setting up CoPs".

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<td>THEME NAME:</td>
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<td>THEME CODE:</td>
<td>07</td>
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Applicability for the sector

The BSCW shared workspace system is a web based groupware system with full document management facilities, flexible role based access rights, shared group calendars and much more. BSCW allows you to improve your internal and external group collaboration. Sharing and exchange of information is nowadays a crucial factor to almost any business. Projects need to be managed with external partners or branches, a bunch of documents is generated, circulated and needs to be managed and archived - and most importantly: all this information must be accessible to authorised personnel only. BSCW is the tool of choice for efficient computer supported collaboration, in particular for geographically dispersed groups. BSCW is easy to set up and use and requires no software installation at the users' sites. No matter if your project partner is sitting on the other side of the world or in the office right next to you - simply use BSCW to access shared information and publish your results to all affected partners.

Conclusion is that the experience of using BSCW platform could very useful for the sector.

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1 Objective of the project
The ultimate goal of the DC CKP is that of providing immediate access to a range of available (tacit and explicit) knowledge, resources and applications (products of all DC themes and basis projects) and knowledge sharing and collaborative working facilities (including communities of practice) on a corporate DC level.

2 Project implementation
The project was seen as oriented towards the software- and hardware-related implementation of ideas developed in the framework of another project 07.03.01 "Collaborative working in DC: Setting up CoPs".

2.1 Analysis of the user requirements
During the testing phase of in the framework of the Communities of Practice project an analysis of user requirements for a PSCW has been carried out. It was concluded that BSCW platform (developed by GMD, German National Research Center for Information Technology) satisfies most of the requirements and has an excellent cost/benefit ratio for Delft Cluster. The experience obtained with the platform will be taken on board in this project.

One of the requirements was the reliability and absence of conflicts with corporate firewalls. These issues were already addressed and will be under permanent control during the implementation of this project. BSCW was extensively checked in DC environment and no conflicts with DC firewalls have been detected. An important factor is that this software is completely HTTP-based (using port 80).

The main

2.2 Encapsulating Web site
In order to keep the DC look-and-feel, a front page was developed that would allow the unified login for all users.
2.3 Hardware solutions

The hardware set up is shown on Figure 2.
3 Operation and maintenance of PSCW

3.1 Setting up and tuning the PSCW
Server was selected and acquired for the platform. This server also runs other Web-based services of the KM platform (for example, supporting CoP projects). Proper security-related arrangements are made in order to ensure the smooth operation and access of all users.

Proper operation and maintenance organised. IHE assigns a person made responsible for the maintenance and tuning. Reliability ensured by inclusion of BSCW computer into the sub-network that is backuped every day and under permanent supervision of IT specialists.

3.2 Additional features
According to additional comments from users some extra features were added. BSCW lacks automated user registration feature, thus special tool has been developed. For user activity analysis Web trends traffic analysed and reporter has been purchased. Mobile Alerting System has been designed to inform Server administrator about any problems on the network.
Moreover during project activity several additional modules and Java components was developed by third parties to provide these optional services:

- Indexing / Document Contents Search
- Workspace Activity Report
- Folder Mail Delivery
- Realtime Awareness Service
- Support for LDAP authentification

3.3 Relation to IntraDC (intranet)

The PSCW is seen as flexible tools to allow both top-down and bottom-up approaches in supporting the collaboration. In this respect it will be an important complement to the IntraDC system (i intranet). IntraDC follows the top-down approach of vertical organisations, geared towards the top-level management so that individual project members cannot upload information and knowledge to the central server. The role of PSCW is to support the collaboration of researchers involved in individual projects in their every-day work. All work modules in the system are based on DC structure to ensure easy navigation.
4 Using PSCW

4.1 How to login to the Platform

In Internet Explorer of Netscape, go to http://dc.ine.nl, click on the Welcome link. You will see the following dialog box:

![Prompt dialog box]

Fill in your username and password. The User Name is your family name (starting with the first capital letter) and the default password for the first login is "welcome" (small letters).

NOTE: If you are already a member of any IHE collaboration platforms, use the username and password you already used before.

Username and Passwords are case sensitive!

Once the login is successful you will see the page which is different for every user and it is personalised. This page presents your workspace and is structured in several folders (workspaces).
4.2 Password forgotten. What to do?

In the Collaborative Platform section click *send an email to the administrator* ([svd@ie.nl](mailto:svd@ie.nl)) specifying in the subject "Password forgotten" and your name.

The administrator of the platform will contact you within 24 hours providing you the information about your account.

### 4.3 Main components of the user interface
1. Menu bar with all possible options accessible on the platform
2. Short-cuts - icons with the most used options, like adding a document or a discussion
3. Quick menu to go to your home, the public folder, Clipboard, Trashcan, Address book or Personal Calendar
4. Your current location: Who you are and where you are in the platform.
5. Quick menu to work with selected objects (folder, document, discussion etc.)
6. List of documents / folders in the current workspace
7. Event tracking system (such as who read the document, who change certain things etc)
8. Action menu: very important since provide actions that one can be performed on each individual object (document, folder, discussion, link etc.)

4.4 Putting a document to the platform

Navigate to (click on) a folder where you want to add a new object, for example to one of the Meetings folders.

In the top menu bar click File and then select New / Document (or click on ) -> in order to add/put a new document to the platform. The document can be in any format (Word file, PPT presentation Excel file etc.)
The following form will appear (see figure right). Select the file (document) that you want to upload (put) on the platform by clicking the "Browse" button.

Note: it is not recommended to provide the Document name because it replaces the original filename in all listings.

Instead, fill in the document Description field (it is optional).

It is important to select the Type of the document by choosing the MIME-TYPE option. For example if you are uploading MS Word document the MIME type is "MS Word", etc.

When ready, click the "OK" button. The document will be put on the collaborative platform.

Depending on the size of the document and the internet connection speed, this procedure may require some time.

If the document was successfully put on the platform, you will see it appearing under the current folder.

The filename is clickable.

4.5 Viewing and downloading a document from the platform

If you simply click on the document name, Internet Explorer will open this document (as a Word or PowerPoint document) for viewing and possible editing. However, you cannot edit the document and save it to the platform with the same name.

In order to download the document and save it locally on the hard disk, you have to right-click the name and select Save Target As. (In Netscape ñ i Save Link As ñ ).
4.6 A bit more: moving between folders, viewing the group and your rights

If you click on you will see the list of all users that have access to this folder. Clicking further on the makes it possible to see your rights.

You have the right to delete your own documents, that is the documents that you put yourself when using your own login name.

By default, nobody has the right to delete documents of others. However, if necessary, the system administrator can give you the additional rights to perform deletions, create folders etc.
4.7 Advanced topics

4.7.1 Setting up your preferences

For optimal performances of the platform, click on the iOptionsî menu item to change your personal settings, such as user details. To set the preferences click on ipreferencesî.

Note: It is highly recommended that the User Profile is set to an Expert level in order to ensure that all platform functionality is available.

4.7.2 Working with your electronic Address Book

By default the electronic Address Book which is stored on the server side is empty. In order to make proper use of it (especially for sending emails, making an appointments etc.) it is recommended to update the Address Book with the very first use of the platform.

From anywhere in your workspace click on the small icon with the faces (members of the collaborative platform) located on the right-side of the main folder. Select the persons that you want to add to your address book and click [to AddressBook] button.

The selected persons will be inserted in your AddressBook

4.7.3 Sending an email via the platform
The collaborative platform can also be used for sending server-side emails. In addition, the platform supports sending various objects (documents, discussions, links etc.) as attachments to the email.

A. If you want to send email to a specific person (or a group of persons), select the person to whom the email will be sent and click on [Send] button (it is highlighted on the figure).

Use the TO button to select more persons from your Address Book. Multiple selections can be done by holding the CTRL button while selecting the names. Fill out the email form and click the OK button at the bottom of the page. The email will be sent from the server.

B. If you want to send certain document(s) as an attachment to the email, first navigate to the folder (workspace) containing the document(s). Select the document(s) to be Send by email (Chapter1.doc in this example) and click the Send button.

Fill out the email form and click the OK button. The selected document(s) will be sending as an attachment to the email.

NOTE: since the main goal of the collaborative platform is to act as a central repository for sharing information and knowledge, it is not recommended to send attachments to the other members of the platform.
4.7.4 How to check what is new on the Platform after the last login?

There are several ways to check what was happening on the platform historically and after the last login. In general, there are two levels of events: (i) on the folder (workspace) level and (ii) on a document (object) level. The procedure is similar for both levels.

Navigate to the folder (workspace) you want to inspect. If there were some activities (different events) in that particular workspace, those will be indicated under the events column on the workspace with different icons:

- new object;
- certain changes occurred;
- the object has been moved;
- modifications;
- object was read or downloaded;

By clicking on the certain icon event one could see who performed that operation and when. In order to "catch up" with all new activities (events) it is advisable to use the Catch Up action. On workspace level: go to File-> Catch Up and on object level: select the object and click the Catch Up button.

Additional information about a particular folder (workspace) can be displayed by clicking the icon. Additional information for a particular object can be displayed by clicking the icon located on the left of the screen at each object.

All events that were happening on folder (workspace) level or on object level can be checked by invoking the File->History action.
4.7.5 Adding new folders, discussions, URL links and searches

4.7.5.1 Adding a folder

- *File / New / Folder (or click on □) -* in order to create new folder (subfolder). If one wants to create a new folder the procedure is the following: Navigate to the folder (workspace) where you want to place the new folder.

The following form will appear (see figure right). Type-in the Name of the folder and the Description (optional).

When ready, click the "OK" button. The folder will be created on the collaborative platform appearing under the current folder.

If you want to modify (change) the name or description click the *ACTION* button on the right (little triangle). A popup menu will appear. Select either "Description" or "Rename" in order to modify the description or rename the folder respectively.
4.7.5.2 Adding a discussion

- *File / New / Discussion (or click on 📝)* -> in order to start/create a new discussion

By clicking the **button the following form will appear (see figure right). Type-in the Name of the discussion forum. Fill-in the Subject of the discussion (note). One discussion forum can contain many subjects (notes). Type-in the Message. Note that the text can be copied and inserted from some other sources such as email, word document etc.

When ready, click the "OK" button located at the bottom of the page. The new discussion form and the new Note will be created under the current folder (see the 2nd figure right).

If you want to modify the name or the content of the discussion (own note only) click the [Action] button on the right.

If you want to see the content of the discussion click on the title of the discussion. Any replays can be send by clicking the [Reply] link on the [Action] popup menu.

4.7.5.3 Adding a URL link

- *File / New / URL* -> in order to add/put/create a new Internet link to a particular web site

By clicking the URL link the following form will appear (see figure right). Type-in the URL (Internet Link) and the Label of the URL. Additionally you can type-in a description of the URL.

When ready, click the "OK" button. The link to the particular web site will be created under the current folder (see the 2nd figure).

If you want to modify (change) the name or description use the [Action] button again.
4.7.6 Adding new customized search

- *File/New/Search (or click on 🔍)* -> in order to create a new customised search.

By clicking the 🔍 button the following form will appear (see figure right). There are various possibilities to search the content of any object in particular folder. The search is full-text.

The search can be performed on particular object (document), name, title, content, created between, etc. By clicking the "Do Search" button one can search for documents, discussion or people containing particular keywords. Please go ahead and experiment with it!

4.7.7 How to put New Event / Activity or an announcement?

In order to put some new event, news, activity or announcement to be shared with all members of the Working Cluster(s), navigate to the */Announcement/* folder, which is available for every Cluster, and simply start a new discussion by clicking *File/New/Discussion* (see section 5). The announcements are put in a form of 1 discussion (note).
4.8 How to ask for additional help on using the platform

This brief manual is by no means complete. For the users who want to know more about the advanced functionalities of the platform there is an additional material located in the /Help and Manuals/ folder (workspace):

1. User Manual: this is the complete manual in PDF format (size about 1.5 MB).
2. Get Started: this is text file which gives some explanations of the platform functionalities
3. On-line Help: click Help in the top menu bar to consult the full on-line help (in HTML format).

5 Analysis of usage statistics

During the implementation of the project the usage statistics was regularly analysed. Figures below show an example of such analysis.

![Graph](image)

*General Statistics - Report Range: 02/01/2002 00:00:00 - 02/17/2003 23:59:59*

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6 Conclusions and recommendations

The main conclusion is that the use of the BSCW platform allowed for a smooth and efficient operation of the Communities of Practice that supported many DC projects. The hardware and software solutions appeared to be adequate to the problem posed.

Recommendations for the future use of such platform are:
• organisation of the Help desk should be given enough attention and adequate funding;
• procedures of adding new users should be automated better n for this purpose additional scripts are to be prepared that would complement the functionality of BSCW;
• if BSCW is made a part of a larger platform, it would be advisable to use its possibility to access LDAP services.
7 References


Web site http://www.bscw.de
General Appendix: Delft Cluster Research Programme Information

This publication is a result of the Delft Cluster research-program 1999-2002 (ICES-KIS-II), that consists of 7 research themes:
► Soil and structures, ► Risks due to flooding, ► Coast and river, ► Urban infrastructure,
► Subsurface management, ► Integrated water resources management, ► Knowledge management.

This publication is part of:

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<td>IHE Delft</td>
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<tr>
<td>Project number</td>
<td>07.02.05</td>
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<td>Projectduration</td>
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<tr>
<td>Financial sponsor(s)</td>
<td>Delft Cluster</td>
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<td>Projectparticipants</td>
<td>GeoDelft</td>
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<td></td>
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<td>IHE - Delft</td>
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<tr>
<td>Total Project-budget</td>
<td>Â49.984</td>
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<tr>
<td>Number of involved PhD-students</td>
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</tr>
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<td>Number of involved PostDocs</td>
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Delft Cluster is an open knowledge network of five Delft-based institutes for long-term fundamental strategic research focused on the sustainable development of densely populated delta areas.

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info@delftcluster.nl
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**Theme Management team:** Knowledge Management

<table>
<thead>
<tr>
<th>Name</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof. R.K. Price (trekker)</td>
<td>IHE Delft</td>
</tr>
<tr>
<td>Prof. A.E. Mynett (duwer)</td>
<td>WL</td>
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**Project group**

During the execution of the project the research team included:

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1 Solomatine D.P.</td>
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<td>2 R.K. Price</td>
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<td>3 N. Kukuric</td>
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<td>5 Dzenisenka S. V.</td>
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**Other Involved personnel**

The realisation of this report involved:

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