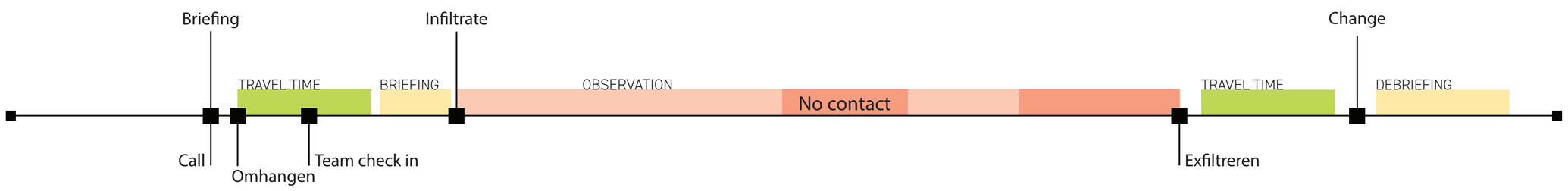
Semio.soles

Developing a smart garment for covert police applications

In the everyday world, the stream of information is ever more prevalent. Words, graphs, shots and ‘snackable content’ are transferred from our preferred medium to our brains through a constant data stream. We are always in contact with the world and when we’re ntot, people think we have fallen off. That’s why we need a different social medium for every occasion and an unlimited data plan in our smart phone subscription.
Where the first mobile phones broke through the boundary of location-based communication, current technological developments aim to make the integration of the communication media in our lives as seamless as possible; the information we devour every day is cluttering our vision and hearing while blocking our connection with what is happening directly around us.
One of the technological feats of recent times that taps into this accumulation of information, is the invention of smart textiles and their ability to integrate sensors, actuators, connectivity and computing power into our clothing and accessories. The fact that smart textiles are able to effectively address more sensory modalities for communication than current media, helps distribute communication over the senses, giving our eyes and ears much needed relief.
Also, given that the electronic components can be integrated in the fabric, interaction with the product (e.g. communication) can take place in an inconspicuous way. This physical integration, however, also presents one of the many technological boundaries of this new field of innovation. And with probably still numerous problems yet unexplored, it is still unclear what the role of smart textiles may be in our future and how it will influence the evolution of communication.
This project serves as an exploration of the application opportunities for the next generation of smart textile products in the niche context of high-pressure police operations. This target group is chosen as their current communication media allow for concrete and clear communication, but are bulky and obtrusive. For these police(wo)men is the communication line essential for a successful operation. Clear and concise communication at all times are critical factors during interventions. They demand much from their communication tools and need them to be invisible as their main safety precaution is to be able to blend in with crowds.

Project brief
The situation of covert agents is such that currently used communication media are obvious to the extent that they are visible and distinguishable to the attentive criminal or bystander. This proposes a threat to the agents at work, as well as to the operations and investigations they work on.
In the modern world where electronic components are integrated in our clothing and accessories, smart textiles provide an interesting opportunity for covert agents to keep their communication hidden and uninterrupted while out on a mission.

Context
The context is operations of covert police units that are specialised in observing people that are affiliated with organised crime or terrorism.
At the starting point of this project was the OPSskin; a smart textiles application developed by Elitac Systems that serves as a haptic display, i.e. a way to transmit information from a device to a user, using the haptic modality. Although the initial goal of the project was to design an iteration of the product for covert agents, it was later decided that this would be broadened to a smart textiles product in general.



1. Covert agent receives call to action for operation start. Initial briefing is done during the call. The agent goes to his car where the equipment is checked and put on. Usually, the agent needs to be able to get to the location within 30 minutes of the call.

2. On the way, the agent calls in on the central channel by stating his name and checking in. All agents that entered the central channel previously will confirm. Everybody knows who is in the operation.

3. Often the covert agents and team leader meet at a central location for an extended briefing. In this briefing the duos are assigned, and the roles are divided, along with an explanation of the goal of the operation and what is likely to happen. In urgent cases, this briefing is done over the central channel.

4. All agents notify the team when they have taken position and when they can see the target. They build a picture with the essential information about the target. Often this starts with what the target is wearing or what car he/she is driving.

5. During the operation all duos work independently, while they report their findings in the main channel. Whenever necessary the team leader or tactical coordinators step in to give additional directions or remarks. Communication is brief and concise, mostly through the transceiver in the main channel, but in cases that talking is not possible (e.g. target and agent are in the same train coupe) the messaging channel is used for communication. Colleagues that are able to talk will confirm the text messages in the main channel, to avoid missed information.

6. When the target needs to be observed from close range (e.g. a meetup in a café or restaurant), communication through transceiver is impossible. Depending on the situation a messaging application can be used. If this is not the case, the agent is ‘going dark’ and no longer has a connection with the rest of the team. In these cases, the agent or duo act according to protocol. The team does not know what is happening in the no-contact zone and are standing by until the no-contact situation is over, or the extreme danger protocol is called to action.

7. When the no-contact situation is over, the agent or duo update the team in the central channel while the operation continues. They also notify the team when the target needs to be taken over.

8. While the observation agents are registering specific details about the target, the tactical team collects all data and provides feedback. Throughout the operation they think of plans of approach to make the operation as effective as possible, without increasing the risks involved.

9. When all targets of the operation have been reached or the window of opportunity for observation is over, the operation is closed, and an exfiltration plan is shaped by the tactical team.

10. After the operation all team members gather to debrief and evaluate the operation. The findings and conclusions of the operation are specified, and the overall process of the operation is discussed. The team leader will report the operation and observation agents report their findings, so it can be used as evidence in court.

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Design for Interaction

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