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Technological mediation of frontline command

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The emergency-service profession continuously implements a range of technologies with the purposes to optimise the handling of fires by using cold cut systems; CAFS-solutions (compressed air foam system) etc., and from a tactical stance devises such as drones and thermal cameras. All these different kinds of technologies have become a part of commanding everyday incidents and offer a range of different technical and tactical approaches, but does indeed also increase the complexity upon the frontline commanders' decision-making processes. This development has enforced a growing interest into the use of awareness technologies such as helmet-cameras or body worn cameras as a mean to study frontline command in real incidents [3] [4] [5]. The action-cameras provides a remarkable insight into frontline command by capturing and retaining the complex sense-making processes in the midst of action. Awareness-supporting technologies are today being used in several European emergency services. Even though video recordings are well-known research tools in studies regarding high-reliability organisations [2], in research related to medical education and simulation [6], and in decision-making in natural settings [1], practitioners as well as researchers experience a lack of knowledge regarding the counterproductive aspects of the mediation by using such technologies in real incidents. We need to ask, *how does the action-camera as an awareness-supporting tool mediate the frontline commanders in counterproductive ways during real incidents?*

The paper aims to challenge the notion of technology as merely a passive tool. Instead, technology is ascribed an agency which enforce, that the technology becomes active. By doing so, it becomes possible to analyse the mediation by the technology in a way, which encompass that the frontline commander use technological artefacts and is being affected by them. The mediation is investigated through participatory observation in real incident and through conversational sessions with commanders from Denmark and Norway, which have applied action-cameras in real incidents as a learning technology. The empirical findings show, that the action camera, as an awareness supporting technology, offers insight into the sense-making process and can, based on the experience of the practitioners, "be an eye-opener". The action-camera mediates though what the manager can learn in several ways – some that are productive and others that appears to be counterproductive. The technology creates vulnerability, a diversion between private/public and a notion

of the technology providing the truth about "what *really* happens". Such perceptions make the technology suitable for uses such as evaluation or as a control lens, which reframes the notion of the technology from an awareness supporting technology to a control technology, which leads the managers to engage in defensive routines to protect their command-function.

This study suggests that the only reality that can be accessed through an action-camera is the situated setting, where the individual recalls and re-experiences being in the midst of action. These recollections can provide valuable insight to the incident crew, as well as to rest of the organisation. However, in discussing the critical events in group sessions, the situated variables related to the specific incidents seem to disappear, and the managers eventually focus on the retrospective 'facts' concerning the actions conducted, as if the incident were a given unambiguous entity.

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