



HFC Møte

Human in modern transport systems – who is in control?

Høvik, 7-8 May 2019

Agenda

Time	Title	Presenter
11:30-12:30	Lunsj	
12:30-13:00	Welcome/Velkommen til seminaret og runde rundt bordet	DNV GL
13:00-13:45	Trust, control, and communication in the transport network	J. Lee /Univ. of Wisconsin
13:45-14:00	Break/Diskusjon og pause – med forfriskninger	
14:00-14:45	Planning for the Future: The National Transport Plan and regulatory development in light of new technologies	Ø. Skånland /Samf.dept
14:45-15:15	Break/Diskusjon og pause – med forfriskninger	
15:15-15:45	Why are self-driving vehicles crashing and what are key human factors	T. Moen /SINTEF
15:45-16:15	Break/Diskusjon og pause – med forfriskninger og noe å bite i	
16:15-16:45	Control, Authority, and Responsibility	B.W. Smith /Stanford
16:45-17:00	Break/Diskusjon og pause – med forfriskninger	
17:00-17:30	Veien fra diesel og manuell til elektrisk og autonom transport (Case fra industriell transportløsninger)	F. T. Sylte/Brønnøy K. M. Ryd, Volvo Truck
17:30-18:00	Meaningful human control over automated driving systems	M. Hagenzieker /TØI & TU Delft
18:00-18:15	Break/Diskusjon og pause	
18:15	Bus to First Hotel Grims Grenka	
19:15	Middag (Dinner) at Vaaghals Dronning Eufemias gate 8	Walking from Hotel

Agenda

Time	Title	Presenter
08:00	Bus to DNV	
08:30-09:15	What Accident Investigation Has Taught Us (And Continues to Teach Us) About Human Factors in Automated Transportation	J. Price /NTSB
09:15-09:30	Break/Diskusjon og pause – med forfriskninger	
09:30-10:00	Railway automation: promises and problems based on lessons from accident investigation and elsewhere	M. Young /RAIB
10:00-10:30	Break/Diskusjon og pause – med forfriskninger	
10:30-11:00	BaneNor Traffic Management System: Human Factors experiences from Norway's largest IT project	K. Hollingdale L. Halvorsen /BaneNor
11:00-11:15	Break/Diskusjon og pause – med forfriskninger	
11:15-11:45	Regelverket og autonome skip – utfordringer og arbeid fremover	S.D. Medhaug /Sjøfartsdir.
12:00-12:30	Drone assisted surveys to improve customers' operations and surveyors' safety	V. Rype /DNV GL
12:30-13:15	Lunch (V1 ved kaffeområdet i XU)	DNV GL
13:15-14:00	Omvisning Maritime Operations Centre DNV	DNV GL
14:15	Bus to train station (To Airport and City)	

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Human Factors (HF) is methods and knowledge to analyse and improve the collaboration between man, technology and organisation.



Exploration of new technology such as automation, remote support, remote operations or integrated operations (IO) implies human collaboration between different organisations integrating different technologies and perceptions. Making human factors (HF) a part of the concept, design and operations of this complex system can improve safety, continuity and resilience (as the ability to handle surprises).

The International Ergonomics Association (IEA) defines HF as:

"Human Factors (or Ergonomics) is the scientific discipline concerned with the understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data, and other methods to design in order to optimize human well-being and overall system performance".

Human Factors domains are: **Organizational factors** (communication, teamwork, CRM...); **Cognitive factors** (perceptions, information processing, HMI...); **Physical ergonomics** (Layout, Working Environment,)

Forum for Human Factors in Control (HFC)

- A forum for users, researchers and consultants of HF methods; meeting twice a year.
- A forum for knowledge transfer that contributes to research and the further development of HF methods in design and evaluation of critical operations.

Attendees:

ABB, Agility Group, Alion Science, Aker/BP, BaneNor, Bærekraftig Arbeidsmiljø, CGM, ConocoPhillips, CIRIS, DnV, Det norske, Eldor, Vår energi, Equinor, Human Centred Design, Halogen, HFN, HRGroup, IFE, IXDA, Kongsberg Intellifield, Lundin, Lloyds, MTO Sikkerhet, NTNU, Shell, National Oilwell, Offsim, Petroleum Safety Authority, Proactima, Rederiforbundet, Scandpower, Safetec, SINTEF, Siemens, Universitetet i Agder..

Information to become a member or participate:

HFC forum at <http://www.hfc.sintef.no> with material. Collaboration (courses) with the Swedish Human Factor Network at <http://www.humanfactorsnetwork.se/>

User: hfn, Password: human.

Comments/contact : HFC@SINTEF.NO

HF training courses has been established:

Courses at UiS and NTNU.

"Introduction to human factors theory", www.ntnu.no/videre/gen/-/courses/nv15348

HFC activities

- Exchange experiences and ideas on HF in control systems, by arranging yearly seminars and experience transfer on topics such as:
 - Human Factors experiences and challenges using ISO 11064; Competence and skills related to HF; Best practice of HF in integrated operations and control centres; Learning from errors/ HF in remote operations of process plants; Error tolerance in complex settings; Collaboration in distributed teams; Future remote operations; Organisational and human factors in accident analysis; Visualisation and HMI; HF in operations; HF in an international perspective.
- Promote knowledge and good solutions for managing and monitoring future operations
- This has been done by involving key note speakers from academia, such as: Prof. Erik Hollnagel, Prof. M. Grabowski, Dr. John Wood, Dr. Phil Duffey, Prof. Patrick Hudson, Prof. Sidney Dekker, Prof. M. Rosen, Prof. N. Stanton, Prof Morten Lind, Dr. J.E. Vinnem, Prof K. Mearns, Prof G.A. Jamieson, Dr. R. Boring, Dr. D. Lucas, R. Miles.; F. Matheson, D. Kaber, Dr. M. Endsley, Dr. J. Thomas
- Contribute to further development of CRIOP to keep it a distinguished HF method for control solutions.
- Contribute to teaching in colleges and universities.

Human Factor Network

HFC are affiliated to the Human Factors organization HFES:

- **HFES - The Human Factors and Ergonomics Society** is a professional association of more than 4500 persons in the United States and throughout the world. Its members include psychologists, engineers, designers, and scientists, all of who have a common interest in designing systems and equipment to be safe and effective for the people who operate and maintain them. See <http://www.hfes.org>. HFES is a member of IEA.

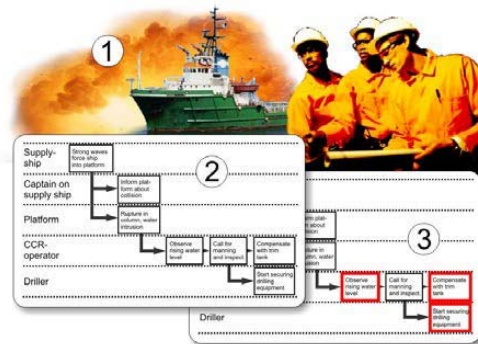
- **IEA - The International Ergonomics Association** is the federation of ergonomics and human factors societies around the world. See <http://www.iea.cc/> . (Represented in Norway.)

Networks/ Collaboration: Se the list at: www.sintef.no/Projectweb/HFC-E/Other-HF-networks-useful-links/

- Local HF Chapter: **HFES – Europe Chapter**. The Human Factors and Ergonomics Society, Europe Chapter, is organised to serve the needs of the human factors profession in Europe. Its purpose is to promote and advance through the interchange of knowledge and methodology in the behavioural, biological, and physical sciences, the understanding of the human factors involved in, and the application of that understanding to the design, acquisition, and use of hardware, software, and personnel aspects of tools, devices, machines, equipment, computers, vehicles, systems, and artificial environments of all kinds. The Chapter is an affiliate of the Human Factors and Ergonomics Society, Inc. See <http://www.conference.hfes-europe.org/>.

In Norway we have established a social network through a LinkedIn site called www.linkedin.com/groups/Human-Factors-in-Control-News-4262740

CRIOP – a HF tool for analyses of control rooms



CRIOP contributes to safe and effective operations through verification and validation of factors related to man, technology and organisation in control rooms.

- Consists of checklists and scenario analyses and takes 2-5 days to accomplish.
- Gives a cost effective learning process between users and designers.
- Developed by Norsk Hydro, Statoil, SINTEF, Scandpower, HFS, IFE and NTNU.
- Freely available to all users. Send improvements and suggestions to criop@sintef.no

CRIOP – see the web site at www.criop.sintef.no

Thank you for participating in HFC Meeting 2019

For further dialogue
please contact...

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