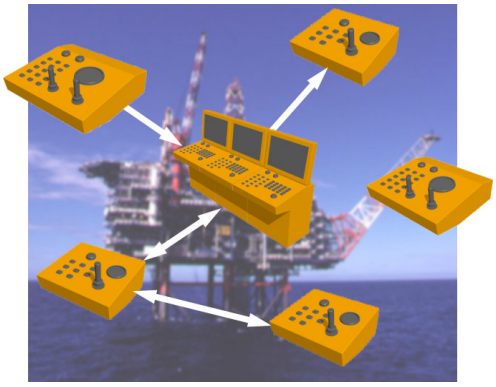
HFC

Forum for Human Factors in Control (to improve safety and continuity)

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



Technology such as AI, automation and remote operations create collaboration between humans, organisations and technologies challenging perceptions and control. Making human factors (HF) a part of design and operations of this complex system can improve safety, continuity, meaningful human control 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) is:

-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. (Sharing of information based on Chatham House Rules).

- Support gender equality in membership and HFC speakers (Supporting networks for women)

Attendees:

ABB, Agility Group, Alion Science, Aker/BP, BaneNor, Bærekraftig Arbeidsmiljø, CGM, ConocoPhillips, CIRIS, DnV, Det norske, Eggs, Eldor, Vår energi, Equinor, Halogen, 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, see:

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: 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….

Open access book published: - **Sensemaking in Safety Critical and Complex Situations: Human Factors & Design**, CRC Press: Taylor and Francis Catalogue # 337796; ISBN: 978-0-367-42243-1, Editors: Stig O. Johnsen and Thomas Porathe. (OA CRC & Amazon).

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, Prof T. Porathe, Dr. R. Boring, Dr. D. Lucas, R. Miles.; F. Matheson, D. Kaber, Dr. M. Endsley, Prof M. H. Lützhöft Dr. J. Thomas, Prof. J. Lee, Prof N. Leveson, Dr. S. Shorrock

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

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

HFC are affiliated to the Human Factors organization HFES:

-HFES - The Human Factors and Ergonomics Society a professional association of more than 4500 persons in the US 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/ .

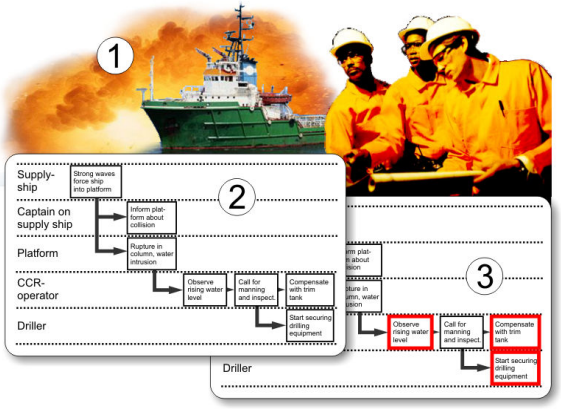
-HFES – Europe Chapter. The Human Factors and Ergonomics Society, Europe Chapter, is organised to serve the needs of the human factors profession in Europe. Its purpose is to promote and advance through the interchange of knowledge and methodology in the behavioural, biological, and physical sciences, 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

HFC Data storage: The purpose of HFC is to establish a professional network of participants with e-mail addresses and company information so that the participants and other stakeholders can contact each other - and thereby further develop the professional network and knowledge about HF. Participants in the HFC meetings are asked if it is OK to store names, e-mail, company and telephone number for information via the WEB and for storage and sending via contact lists. Names can be removed if desired by sending a message to HFC@sintef.no with the text Fjern/Remove.

CRIOP – a HF tool for analyses of control rooms



CRIOP – see www.criop.sintef.no

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. (Norwegian versions of checklists available)
- 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, based on Open Access: CC BY 4.0

If needed: Send improvements and suggestions to criop@sintef.no