



## Workshop

### HF Guidelines for off-shore CCTV systems

Ruud Pikaar Eur.Erg.



## Content



- Short project outline – what do we know ?
  - Part I – research (May '12-'13)
- Cases: remote control
  - comment & do you recognize ?
- Do we need to establish standards ?
  - Part II – research proposal ('14)
- Become a stakeholder ?
  - proposal to collaborate

## Goal



- Develop HF Guidelines for CCTV work systems
  - to fill in blank spots (off shore, remote control)
  - fitted to engineering needs
  - CRIOP: add CCTV requirements
- Our basis of today
  - 8 case studies & literature search
  - report *Technology and literature review*
  - Pilot experiments: perceived image quality
  - *Draft HF Guidelines*

## Definition of CCTV-system

- scene (& environment) → camera/recording → transmission → display → cognitive processing



scenery



camera



network



screen



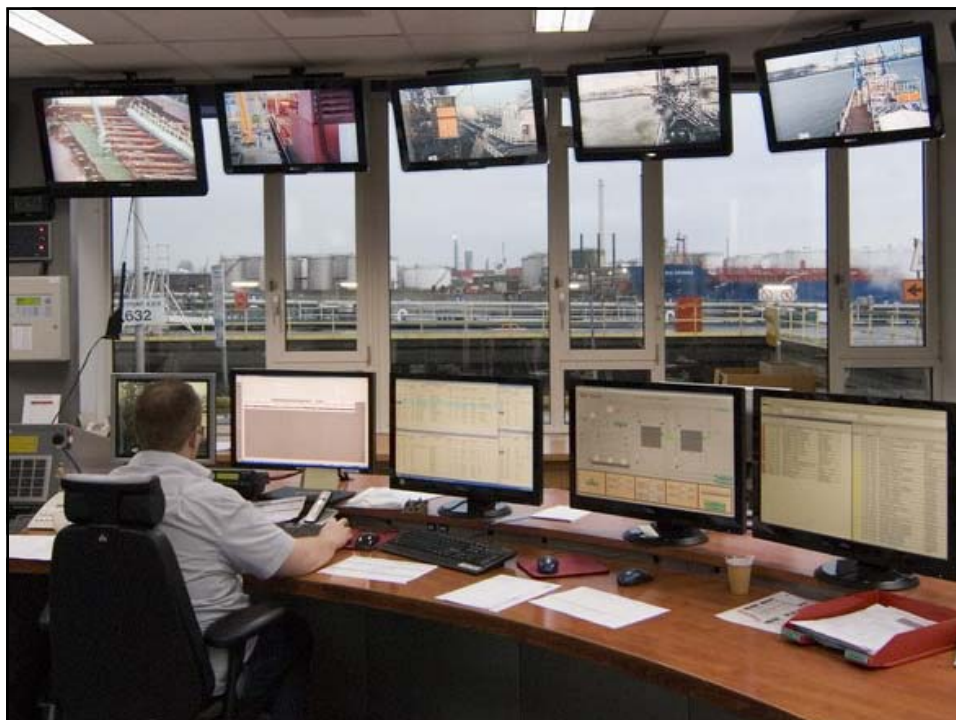
perception

- Tasks typology (in literature):
  - detect, monitor (observe), recognize, identify

## Challenge .....



- tanker terminal
- remote supervision (safety)
- your comments
- can same situations be found in your own organisation?



## this is not good HF .....



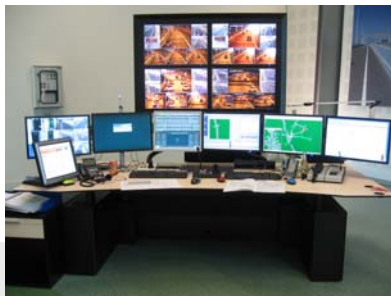
- workplace layout
  - large viewing distance & angle
  - large screens: scaling
  - wide screens: distortion
- images
  - low picture resolution
  - maritime situation, reflections via water
- did you do better ?



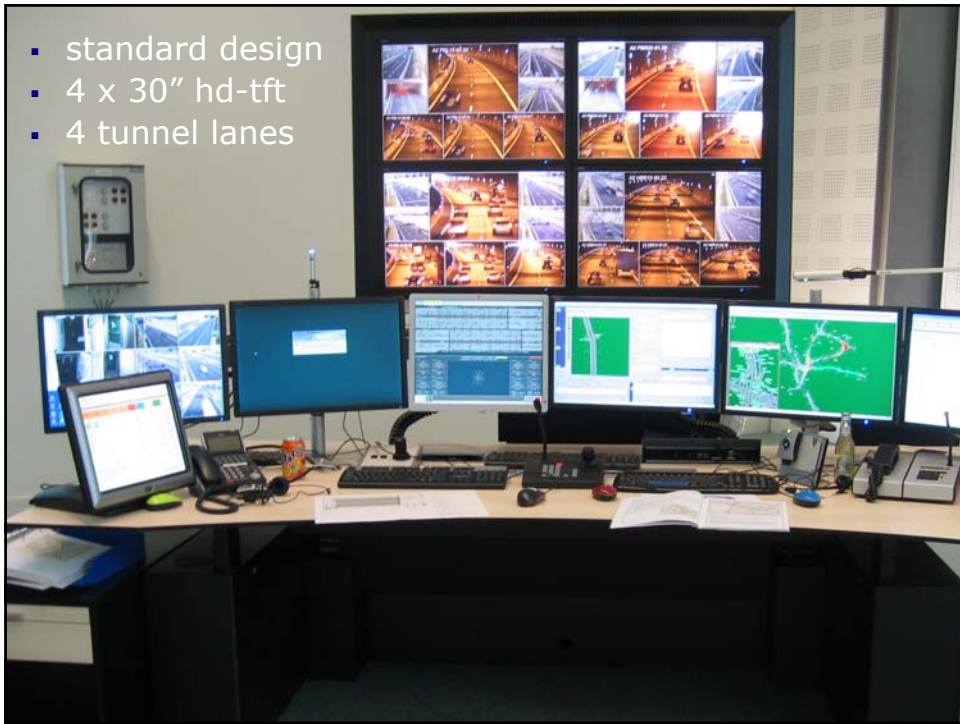
## Case – Videowall technology



- workstation with videowall
  - left – governmental standard
  - right – new (test)
  - what do you think operators like best ?
  - and why ?



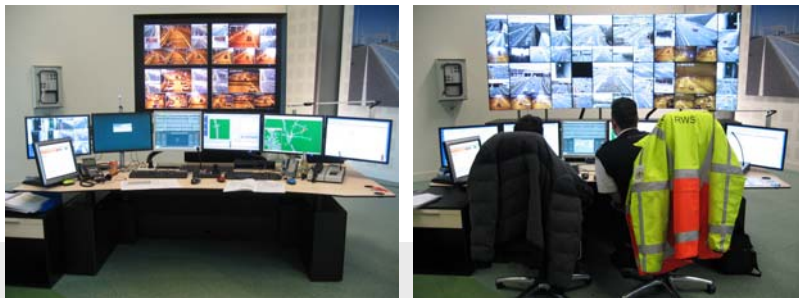
- standard design
- 4 x 30" hd-tft
- 4 tunnel lanes



## Case – Videowall technology



- left – standard: best CCTV resolution
- right – new: larger, reduced resolution
  - operators like .....
- experienced image quality



## Need for better guidelines



- Goal: HF guidelines
  - for the project/engineering environment
  - system approach (MMI)
  - in line with ISO-standards
- Literature: less than expected.....  
.....we did not finish/finalize our guidelines
- Case studies
  - do we understand user preferences ?
  - what is best for task performance ?

## CCTV-Research Part II



- 3 Work Packages
  - 1. Concept of Scene
  - 2. Experienced Image Quality
  - 3. Final Guidelines
    - including off shore / remote control
- Start WP 1 & WP 2 – November 2013
  - funded by Dutch project partners
- WP 3 – Norwegian contribution ?
- Work packages in line with your needs ?

## WP1 – Concept of Scenes



- **Scene**
  - logical and meaningful set of visual information, to be monitored with a specific aim.
  - closely linked to operator task (i.e. better than the # of cameras rules)
  - possibly better relationship with complexity parameters.
- Example: tunnel safety
  - overview condition
  - incident condition

## WP1 – Concept of Scenes



- **Aim:**
  - develop theory
  - guidelines operator workload
  - define task complexity
- How: review of literature & re-visit cases
  - how to identify a scene, check in practice
  - how to design scenes (image arrangements)
- Product: guidelines (& background)
- Cost: 40 days (rough estimate)

## WP2 – Image quality



- Aim:
  - to understand variables influencing experienced image quality
  - develop evidenced test procedure
- How:
  - laboratory / simulator experiments
- Product: method & procedure
  - on going research (at University Arnhem-Nijmegen, NL)



## WP3 – Final Guidelines



- Aim: Final guidelines
  - check feedback & recent literature
  - integrate results of WP 1 and WP 2
- How:
  - testing / feed back project partners
  - scientific review by Sintef, possibly others
  - generic, plus supplemental annexes
- Product: document
- Estimated cost: 40 days (rough estimate)

## Research funding



- Low investment, high output !
- Output: guidelines, including for CCTV in off-shore and industrial environments
- Investment: each project partners @ € 8.000
- Role Human Factors in Control members
  - do you want to establish CCTV standards ?
  - transfer of current knowledge
  - > 50% of research to be done in Norway

## Research continues !



- I was your guest in Bergen, and now I actively use CRIOP. I see potential to extend CRIOP with CCTV guidance.
- HFC is a unique forum to establish the need for guidelines. The project needs your support
- Become a stakeholder
  - contact [ruud.pikaar@ergos.nl](mailto:ruud.pikaar@ergos.nl)
  - or [stig.o.johnsen@sintef.no](mailto:stig.o.johnsen@sintef.no)