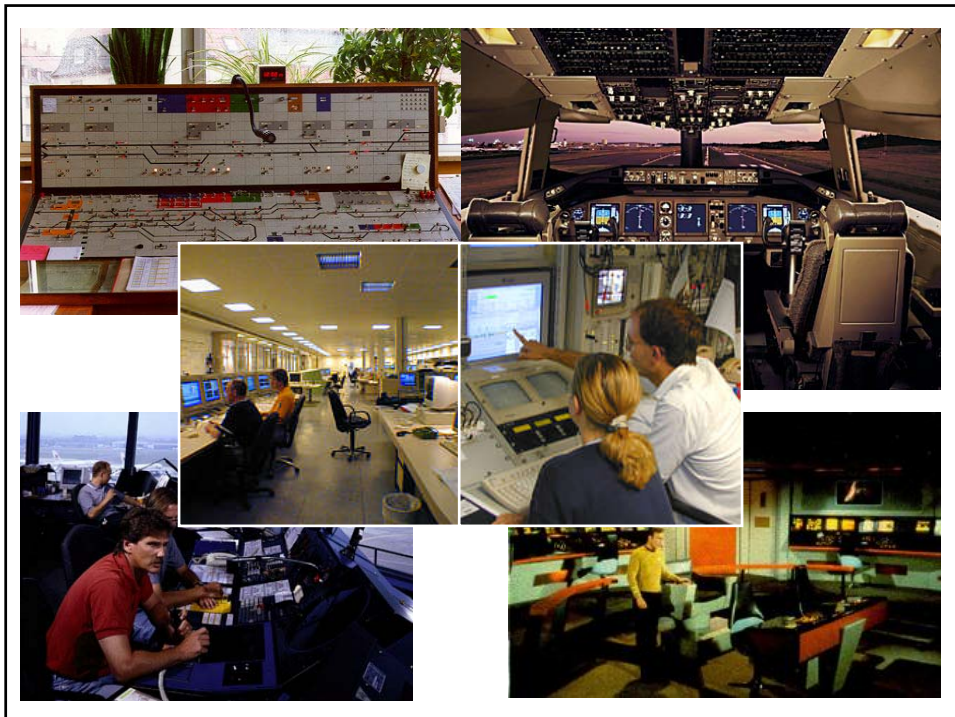
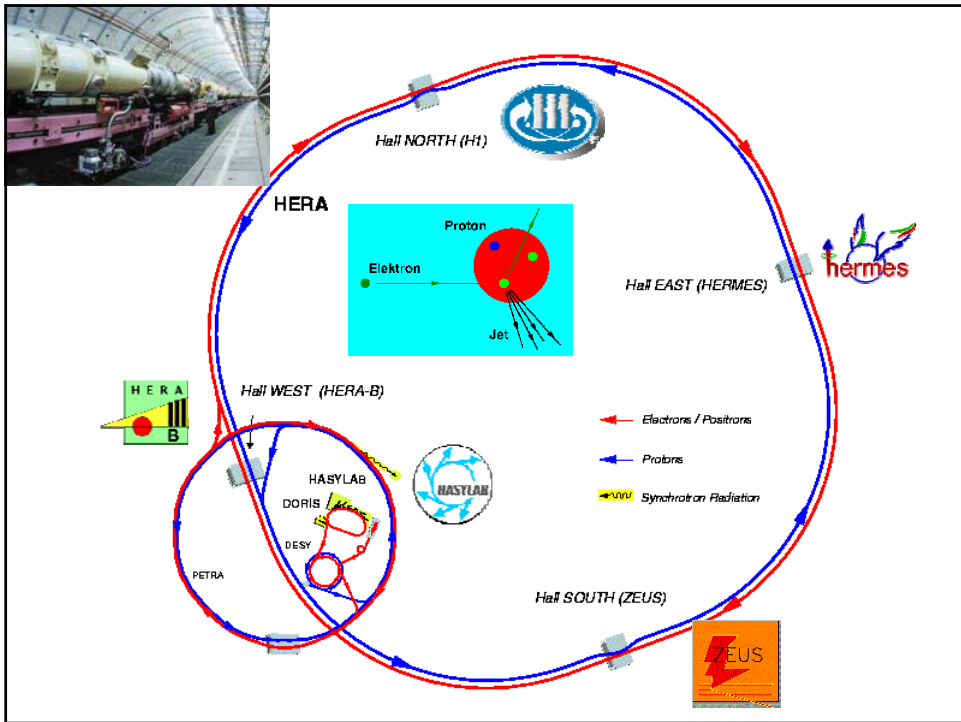


**Expectations to a Control System from  
Different User Groups**

**Stefan Wilke DESY, MST**

**Heiko Ehrlichmann DESY, MPE**





Until now:  
 Status and Progress of Control Systems,  
 Technical Details,  
 System Administration,  
 Concepts, Tools, ...

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## What's about the users?

- (control system constructors)
- chief of a machine
- guest (WWW)
- persons who care for components
- operator on shift ←

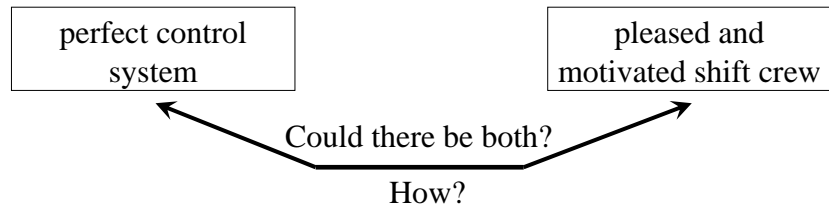
## Requirements to a Control System

who	information	action
guest	selection	no
<b><u>operator on shift</u></b>	compact	easy, self explaining, secure, coincide
chief of a machine	in detail	extensive, variable
persons who care for components	special, much more details	special, extreme deep
control system constructors	other layer (no machine operating): secure, stable, uniform solutions, easy maintenance	

**Main goal:**

efficient, stable, smooth operation  
and happy experiments.

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What do a operation crew want?

The operation crew want:



**A comfortable shift!**



- ergonomic
- automation
- participation in consol program design
- stability

### **Official rules for work at consols**

(ISO/DIS 9241-10, 1993)

(DIN 66234-8)

- Suitable for the task
- Self-explaining
- Controllability
- Perform user expectations
- Error tolerance
- Modification for user individual needs are possible
- ...

Operators view

## Conventional Wisdoms I

- eye friendly backgrounds / contrast (not white)
- fonts (text and numbers), buttons and controls not too small
- color codes (green: ok, yellow: selected or warning, red: error)
- not too much color on the screen
- no overlapping windows (prevent covered information)
- no delay to user actions (at least a hourglass)
- enough data - but not too much!
- suitable update rate (not too fast, not too slow)
- consistent data at all consol and all displays
- separation of status and operating (no status on command button)

## Conventional Wisdoms II

- stability in operation
- no cryptic error messages (“Error 42”, “FPSS Time Out”)
- a helpful alarm system! (only real errors, acoustic on main errors)
- no extreme hierarchical menu structure (climbing up/down trees)
- compact operation (e.g.: no switching sequence at different terminals)
- no operation from outside without permission by the operator
  
- variability (to changing and additional wishes)
- archiving (all relevant information for offline - correlations)
- documentation

## Automation!?

good for



**But** need of reliable data  
need of very(!) good error- and alarm system  
transparence needed (no hidden procedures)  
shift crew becomes stupid  
nobody could run the machine ‘by hand’ anymore  
lost of feeling to the machine

which procedures should become automatic?  
how deep?

## Examples of automation at DESY

PETRA autopilot

HERA sequencer

## The Future?