

# The Operator in focus

Using an intelligent & smart ergonomic workplace

Presented by

Jeton Partini  
Interaction designer / Human Factors  
jeton@cgm.se

Pierre Skönnegård  
Industrial designer  
pierre.skonnegard@cgm.se



CGM

Please also visit our website [www.cgm.se](http://www.cgm.se)

## Challenges in attracting the next generation of users


- It is expected that the soon to arrive generation of operators will be higher educated than their predecessors although have less experience of the process and its safe and efficient operation. Baby boomers will leave soon the working environment.
- Human-centred design (the active involvement of users).
  - Multitasking as a part of new generations everyday use.
  - From keyboard to touch screen (iPad generation).
  - The generation G (Gaming Generation).
  - Intermediate fields of operation (while reducing the human error possibilities).
  - Create attractive 24/7 environments and prevent operator boredom and fatigue.
  - Individual wellbeing in the workplace.
  - Safety and Operator Effectiveness

CGM

## Intermediated fields of environment

- Improving ergonomics, safety and security while working in combined different fields, organizations and different Distributed Control Systems (DCS).

### Integrated Collaboration Environment



### Fields of operation

- Oil & Gas
- Aviation
- Rail
- Energy
- Marine
- Process based industries

CGM

## CGM has incorporated a different technology in to intelligent desk operator (IOW)

- Personalized Ergonomics.
- Motion recognition Sensors (Motion Guard).
- System of measuring the operators health status (Operator Activity Cloud).
- IOW Control Panel (Touchpad System).
- Display Screen Equipment (Close Large Overview and multiple monitors).
- CCTV integration in IOW
- Sound System Integration (Sound Shower System).
- Telecom integration (VHF, UHF, Marine, Satellite radio, Land line, Mobile).
- Keyboard integration with different Distributed Control Systems (DCS).
- Lighting system integration.
- Integrating graphic the different DCS systems into the new IOW.
- Smart alarm solution integration (Individually alarm solutions for operators).

CGM

**Intelligent Operator Workplace**

The Control Room Environments are changing

CGM

**Activity based & personalized HMI dialog box**

- A new standard to evaluate operators and keep them healthy
- Control all health data and take ownership of the operators wellbeing
- A significant piece of operator efficiency is depending on the operator itself

CGM

**CGM has developed an ergonomic collaboration desk and also a P&ID viewer**

- The CGM D3 Collaboration desk with many new touch interaction options for operators
- D3 stands for Design – Discussion – Decision

- Save time and reduce risk by finding the right information at the right time.
- Friendly user interface software providing operators a new interactive way to browse P&ID drawings and allow them to access available information faster
- Increase the productivity and reduced risk by ensuring everyone is working with the most up-to-date information.
- The new P&ID viewer software we developed can be seen from this link <http://www.cgm.se/7q-e3-pid-viewer>.

The KPI 3D plant / P&ID viewer are typical examples of new developed products that simplify daily tasks for the operators.

CGM

**To work with the free of charge SketchUp saves valuable time in projects**

- Easy import and export to all types of program and very fun to work with
- Increases the overall understanding for complete control room with adjacent areas
- CGM have made special tutorial movies that make it easy and fast to be productive

Download a 3D demo SketchUp control room from [this link](#)

CGM

**CGM has developed our own flexible Human Factors manikins for analyzing purposes**

- Adjustable sight cones which also follow head movements and built in reach cones.
- Measurement tools used for reviewing layouts are also available.
- Visualize viewing angles and readability distances are a few of several useful functions.



See a short movie showing manikins in different percentiles and positions via [this link](#)

**Alert and focused operators make fast and correct decisions**

The highly collaborative environment in a modern control room or operations center is not only the heart of the operation, but also the brain.



By using this link [https://www.cgm.se/FOG/rtual\\_Control\\_RoomWebPlayerOriginal/](https://www.cgm.se/FOG/rtual_Control_RoomWebPlayerOriginal/) you can explore our Future Operation Centre in Borås, Sweden.

**It is not always obvious that the operators must sit far away from a big display wall**

Refinery with a big common overview using the Alerto operator desks



- This is an example of a control room using our state of the art ergonomic operator desk system named Alerto that are supporting a traditional big wall screen arrangement.

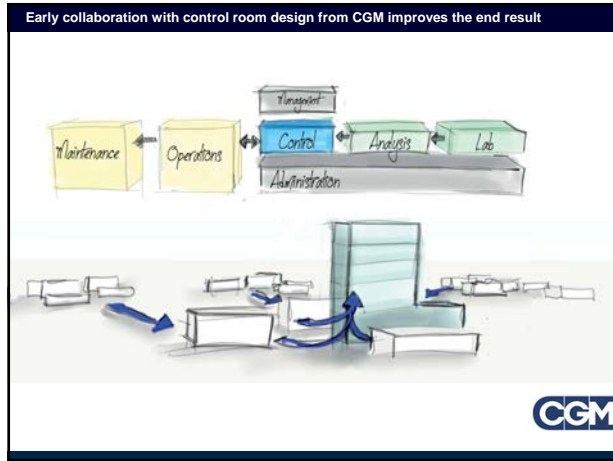
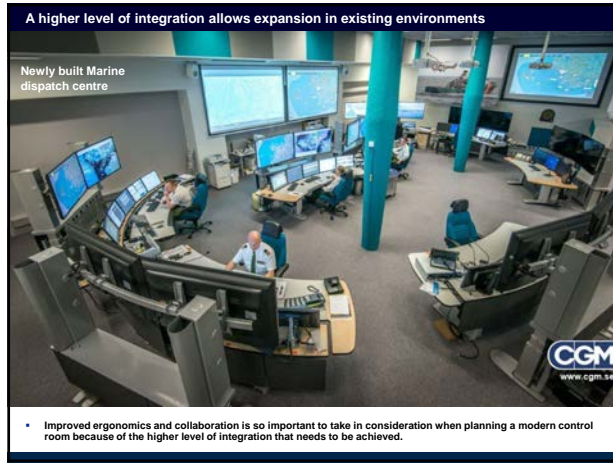
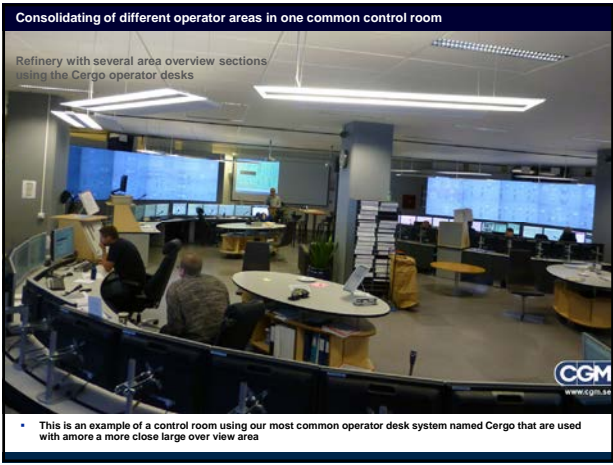
**A higher level of integration allows expansion in existing environments**

Newly built Control center for a Oil Refinery



This link [http://www.cgm.se/pdf-filer/CGM\\_150\\_layout\\_proposals.pdf](http://www.cgm.se/pdf-filer/CGM_150_layout_proposals.pdf) shows examples of several good 24/7 environments (layouts) we have made in different projects.

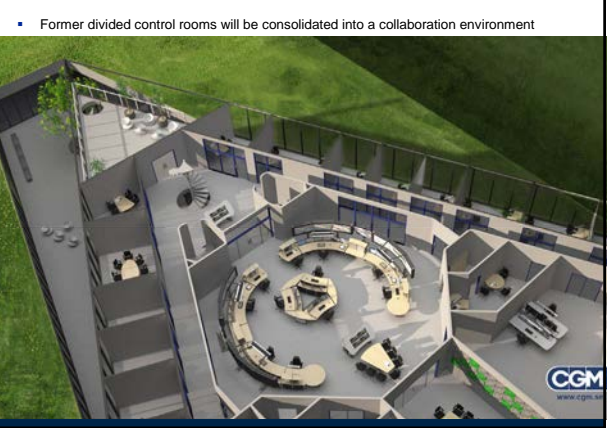
- The higher level of integrated organization often requires fewer active inside and outside operators due to more efficient process overview and the ability to easily interpret the situation as a whole.



Early collaboration with control room design from CGM improves the end result



Early collaboration with control room design from CGM improves the end result



CGM offers, in addition to the ABB unique EOW-x concept, three different series of operator desk systems and other furnishings for adjacent areas outside the control room.



Designed to keep operators alert during monotony and calm in emergencies. Our operator desks and auxiliary products are bio-mechanically optimized, aesthetically pleasing and built to last.