

TRANSFORMING **INSIGHTS**  
TO SAFE AND EFFICIENT SYSTEMS  
FOR **CRITICAL ENVIRONMENTS**

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HALOGEN.

# HALOGEN.

PROBLEM SOLVING IN COMPLEX ENVIRONMENTS



**Schlumberger**

**FMC Technologies**



**aibel**

**FFI** Forsvarets  
forskningsinstitutt  
Norwegian Defence Research Establishment



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# WHAT IS A CRITICAL SYSTEM?



# DEMANDS OF THE PROFESSIONAL USER

“IT HAS TO WORK 10 OUT OF 10 TIMES”



SECONDARY:  
USE IT SOMETIMES



TERTIARY:  
AFFECTED BY ITS USE

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A large offshore oil rig is shown in the middle of a stormy sea. The rig has a prominent white superstructure with various antennas and sensors. The hull is a dark red color. The sea is dark and turbulent, with white foam from the waves crashing against the rig. The sky is overcast and grey. The overall scene conveys a sense of industrial scale and environmental challenge.

# SAFETY-CRITICAL SYSTEMS

HALO

# OUR APPROACH


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DO NOT ASSUME -  
OBSERVE **REAL CONTEXT**

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A person is seated in a control room, viewed from behind. They are surrounded by numerous computer monitors displaying various data, charts, and maps. The room is dimly lit, with the primary light source being the screens. The overall atmosphere is one of a high-tech, professional environment.

BASIC HUMAN  
NEEDS WILL NOT  
CHANGE

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2

4

# UNDERSTAND NATURAL PROCESSES AND WORKFLOWS

# HALOGEN.

3

1





**CO-CREATION IS KEY TO  
USER-DRIVEN PROCESSES**

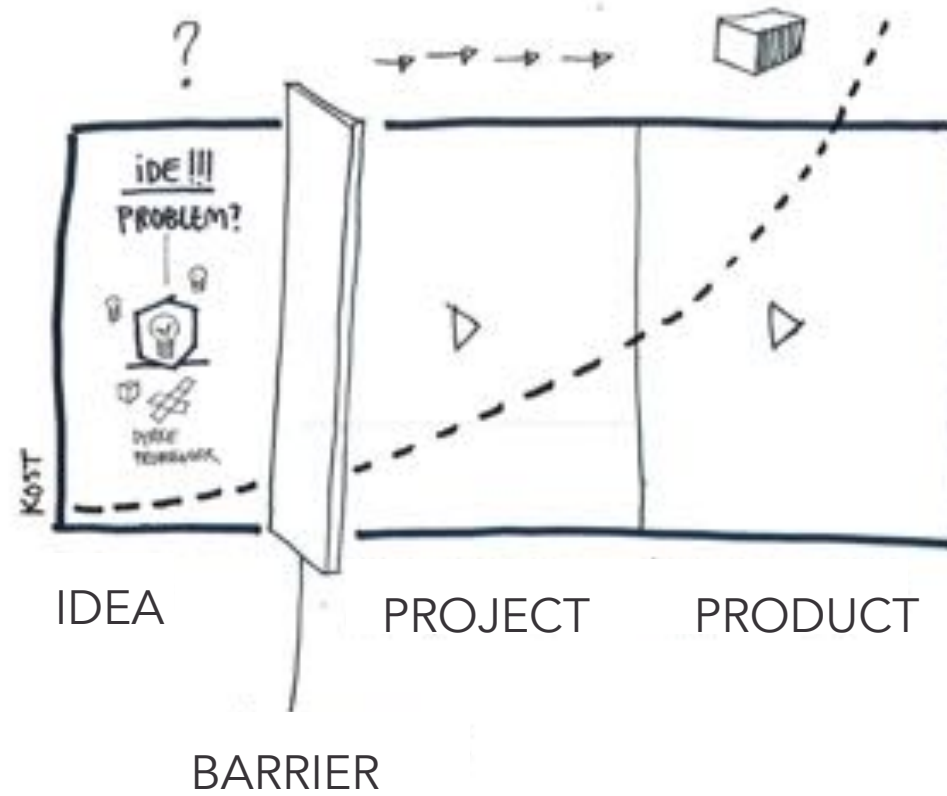
**HALOGEN**

WHAT for WHO – before HOW



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# START THE PROJECT RIGHT



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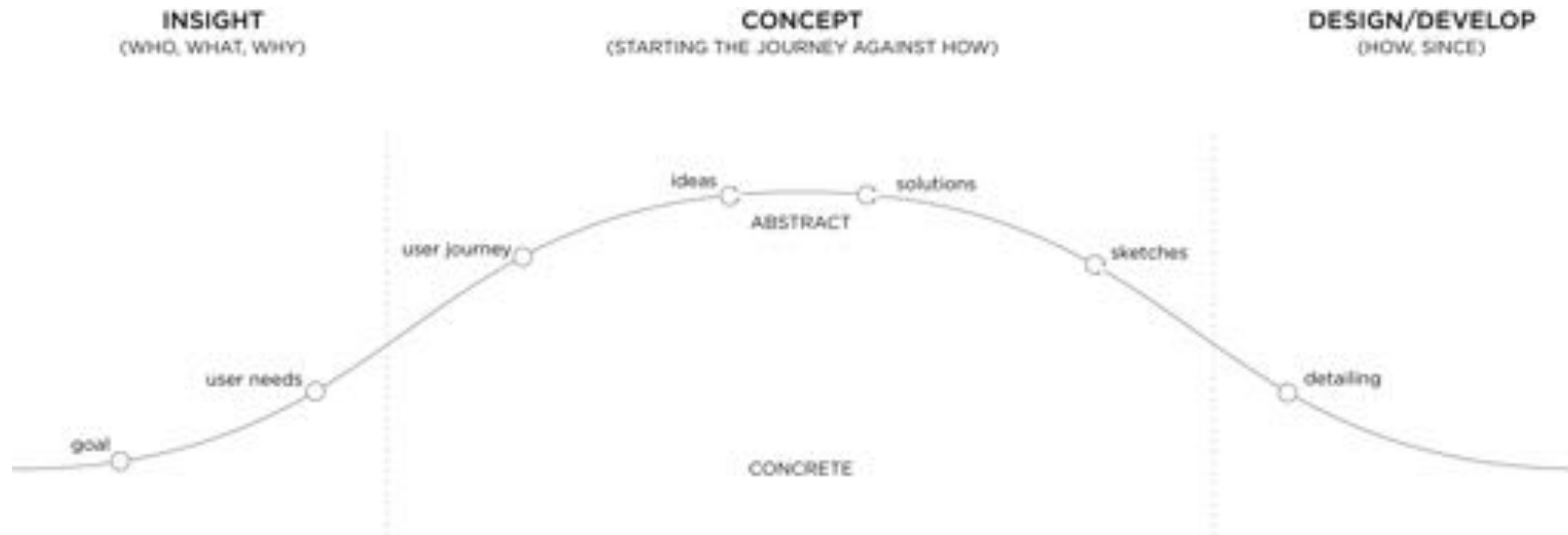


An aerial photograph of a vast, misty forest landscape. The scene shows rolling hills and valleys covered in dense evergreen trees. A thick layer of white mist or fog fills the lower parts of the valleys, creating a sense of depth and mystery. The sky is overcast and grey, contributing to a moody atmosphere. The overall color palette is muted, with various shades of green, grey, and white.

GET **LOST** IN THE WOODS

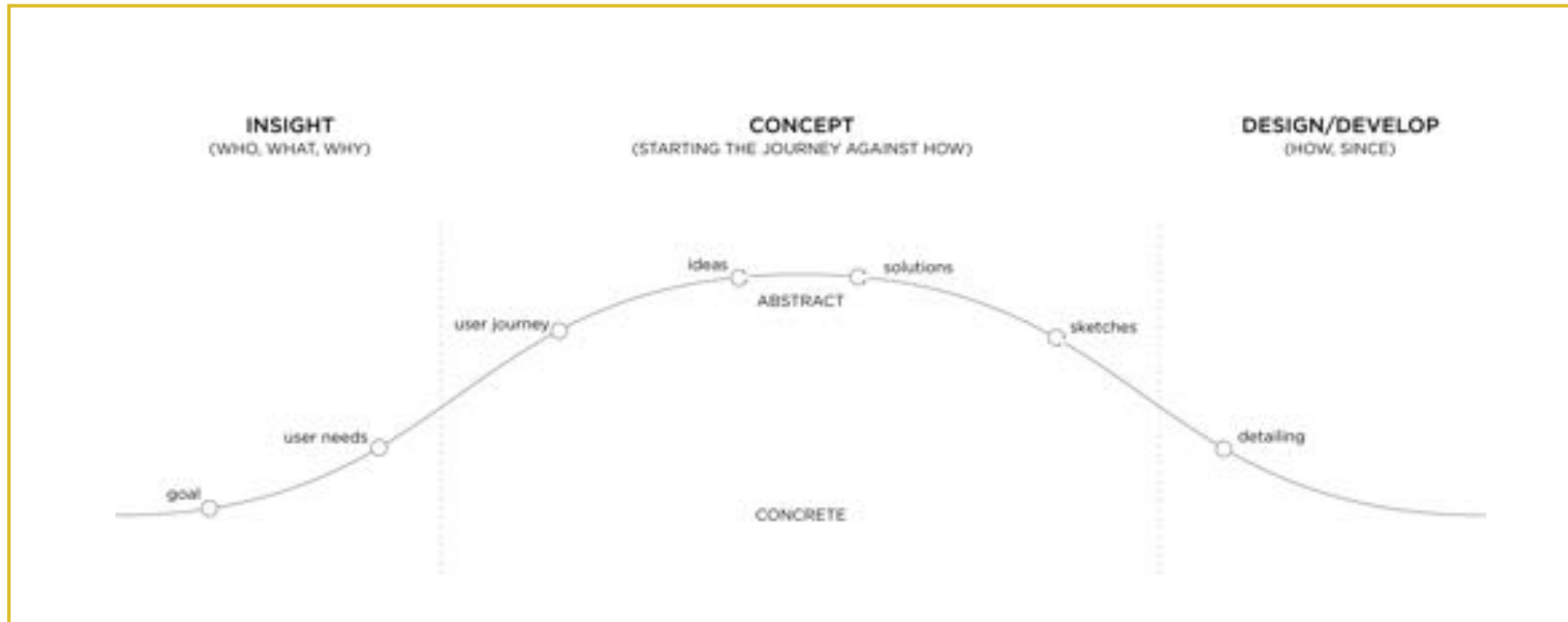
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# OUR COMPASS



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# OUR COMPASS



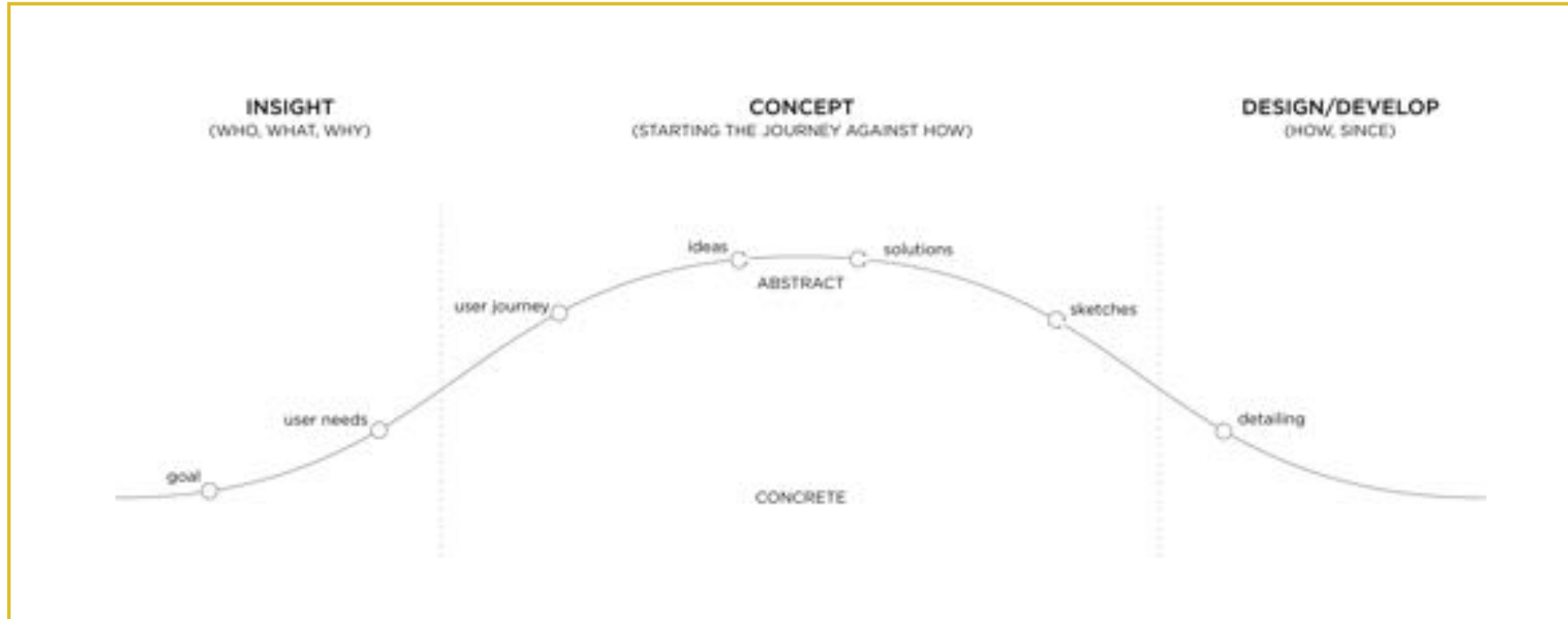
STANDARDS

REGULATIONS

HUMAN FACTORS

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# OUR COMPASS



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CASE  
- ADX -

AIR DEFENCE CONSOLE – NEXT GENERATION

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- WHAT -

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# WORK PLACE & CONTEXT



PHOTO: ARMY RECOGNITION



PHOTO: THE KONGSBERG GROUP

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# THE OLD SYSTEM



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- WHO -

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Inga

Crew Chief Launcher





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High stress levels  
Reduced situation awareness  
No decision support  
Forced workflows



HALOGEN.

PHOTO: THE KONGSBERG GROUP



TUMBLEWEED!

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FINAL PRODUCT

HALOGEN.





HALOGEN.

PHOTO: IHS JANE'S





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This has made our work  
100 times easier!

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# REFLECTIONS

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HOW CAN WE BRIDGE **THE GAP**  
TOGETHER?

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WOULD YOU ENJOY USING THE  
SYSTEMS YOU HAVE DEVELOPED?

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