



SUBTICS® – FACING THE FUTURE OF SUBMARINE COMBAT SYSTEMS

Jean-Jacques Parmentier
Submarine Combat System Product Line Director

27th June 2018

NON SENSITIVE

© Naval Group SA property 2018
All rights reserved

TABLE OF CONTENTS

1. Submarine systems challenges
2. SUBTICS® evolutions

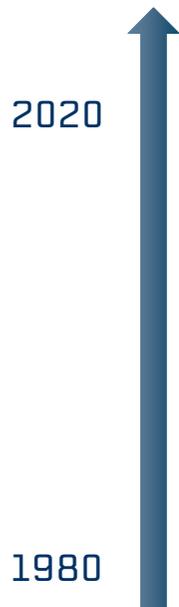
SUBMARINE SYSTEMS CHALLENGES

USER CHALLENGES

TECHNICAL CHALLENGES

SUBMARINE SYSTEMS CHALLENGES

USER CHALLENGES



- Drone operations
- Land attack / Deep strike
- Special Forces
- Intelligence
- Naval force support
- Sea Denial
- Anti Submarine Warfare
- Anti Surface Warfare

Scorpene SSK



28

Scorpene SSK



31

Agosta SSK



36

Barracuda SSN



60

Rubis Class SSN

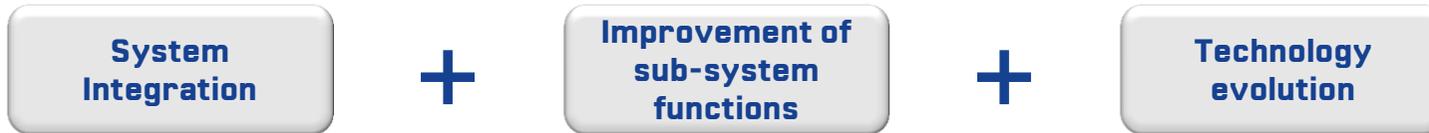


68



SUBMARINE SYSTEMS CHALLENGES

TECHNICAL CHALLENGES

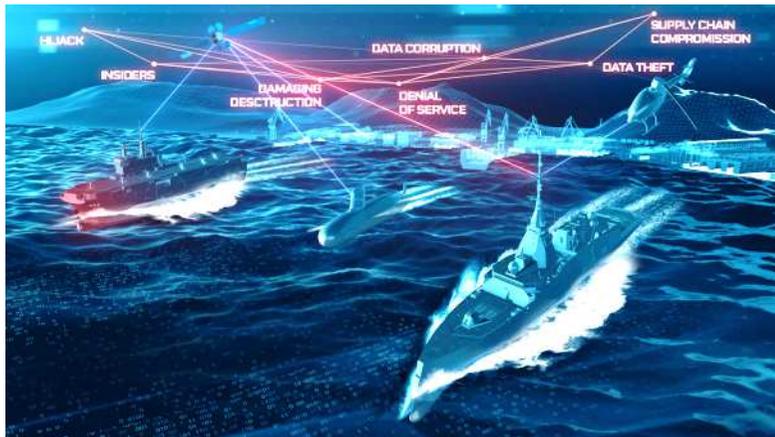


SUBMARINE SYSTEMS CHALLENGES

TECHNICAL CHALLENGES – CYBER SECURITY

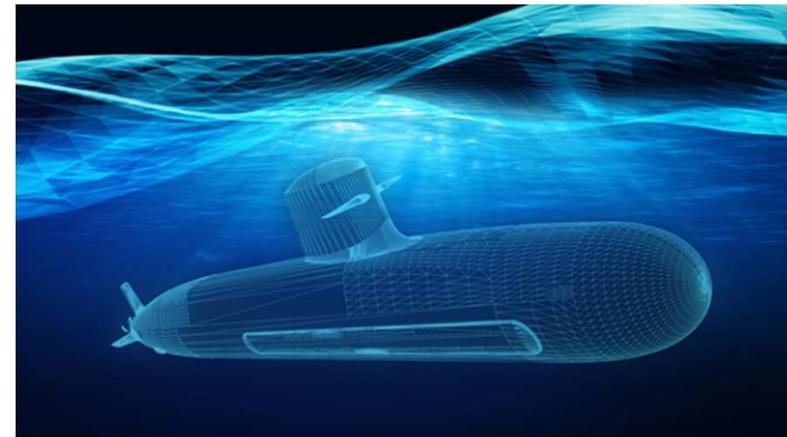
Cyber threat is rising

- Multiple attacks
- Multiple vectors
- Multiple targets



With specific submarine constraints

- Operational continuity
- Less operators
- Isolation

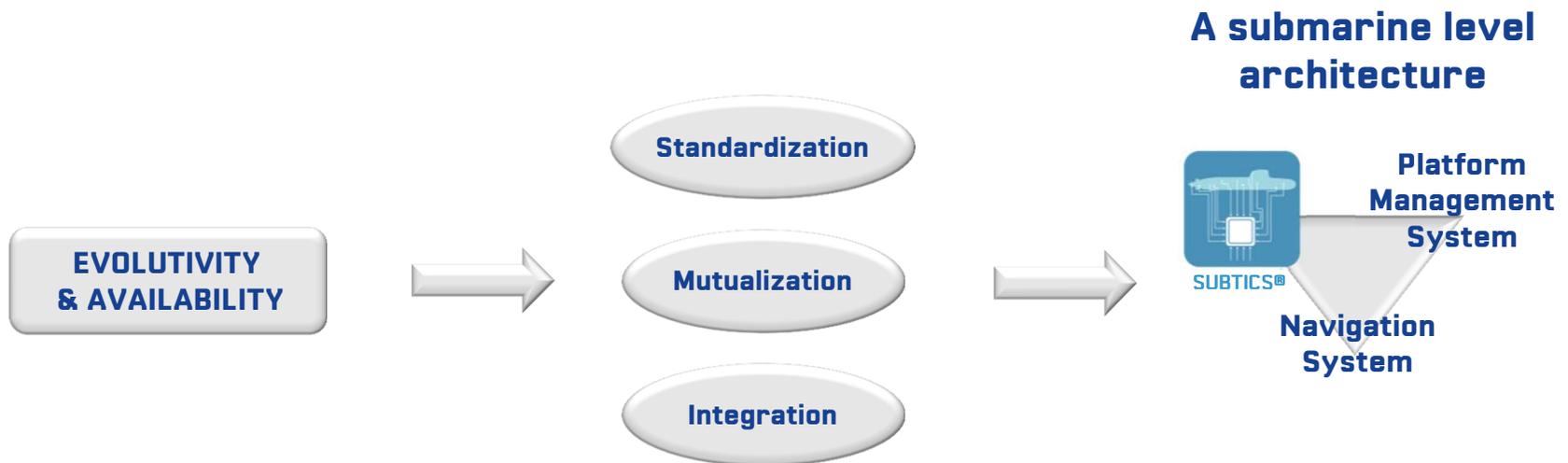


SUBTICS® EVOLUTIONS
ARCHITECTURAL EVOLUTIONS
OPERATION EVOLUTIONS

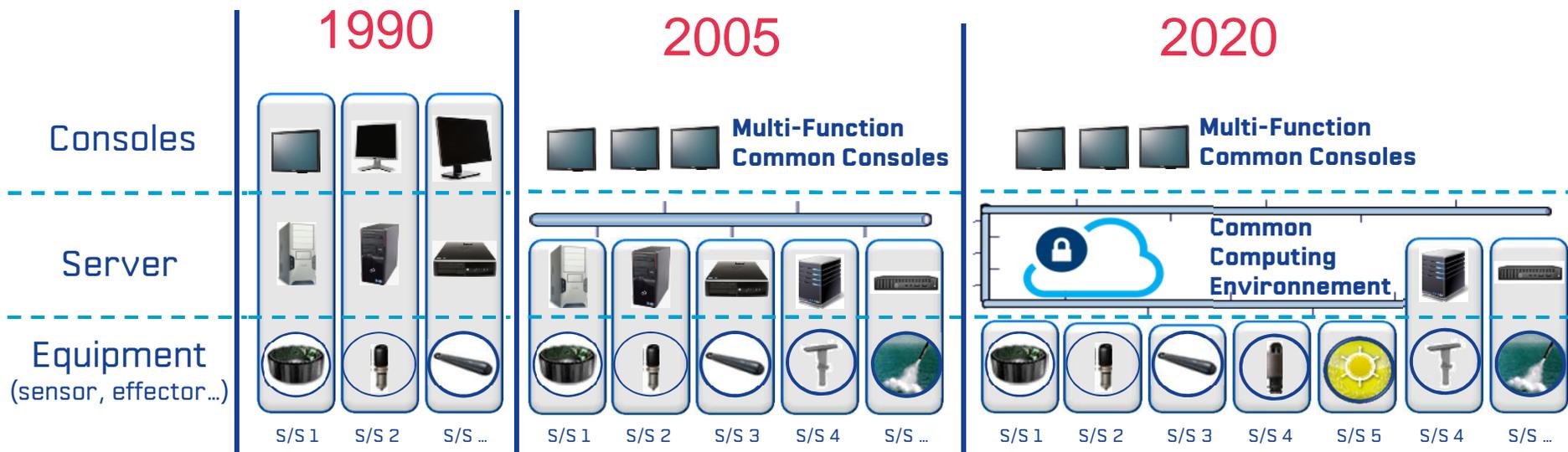


ARCHITECTURAL EVOLUTIONS

MAIN AXES OF EVOLUTION



ARCHITECTURAL EVOLUTIONS TOWARDS A COMMON COMPUTING ENVIRONNEMENT

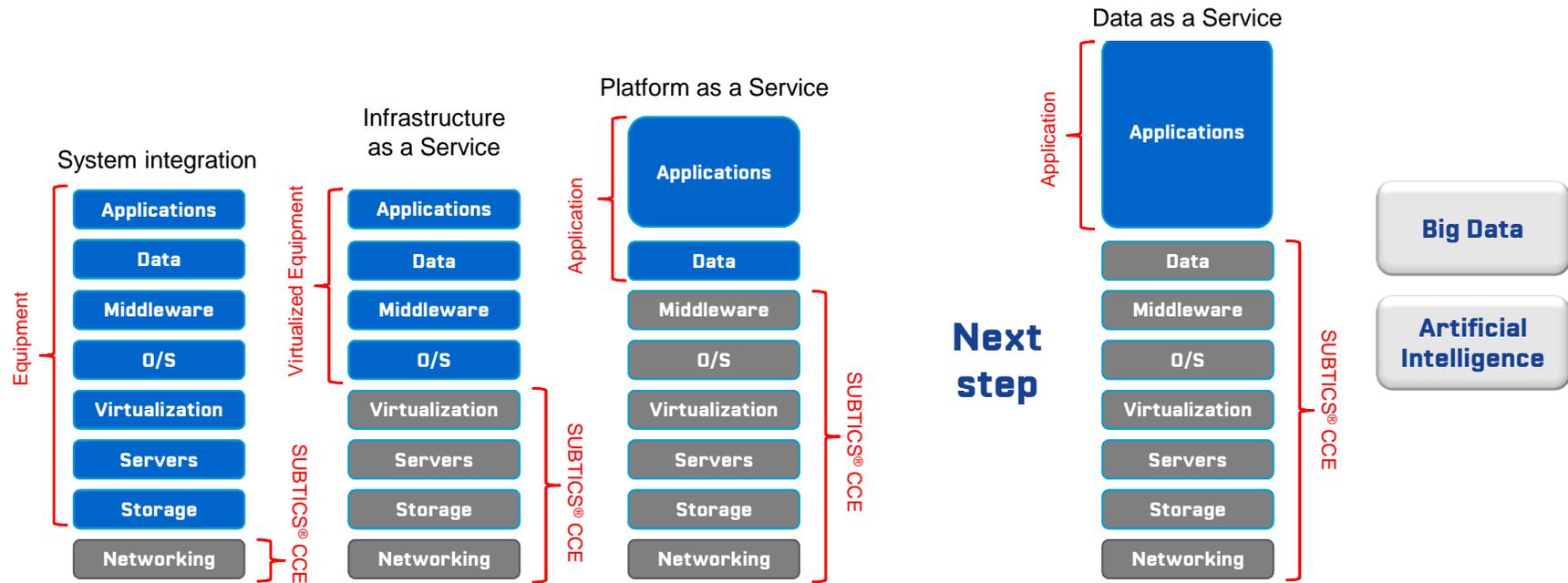


ARCHITECTURAL EVOLUTIONS

SEPARATION OF RESPONSIBILITIES

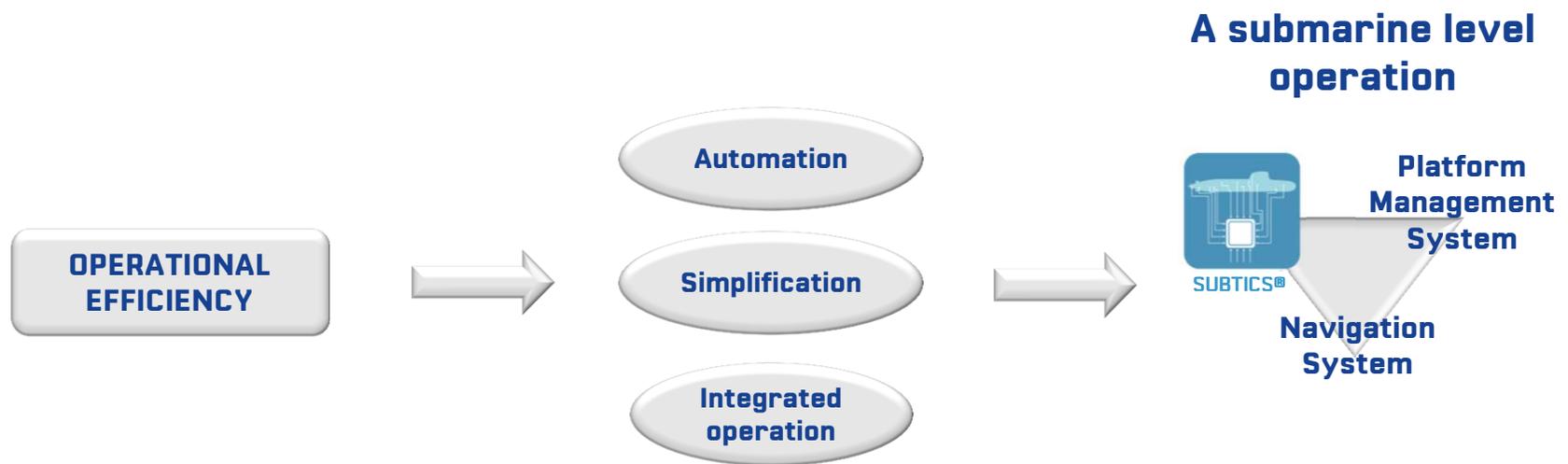


SUBTICS® Common Computing Environment allows different separation of responsibilities models with equipment suppliers or local partners

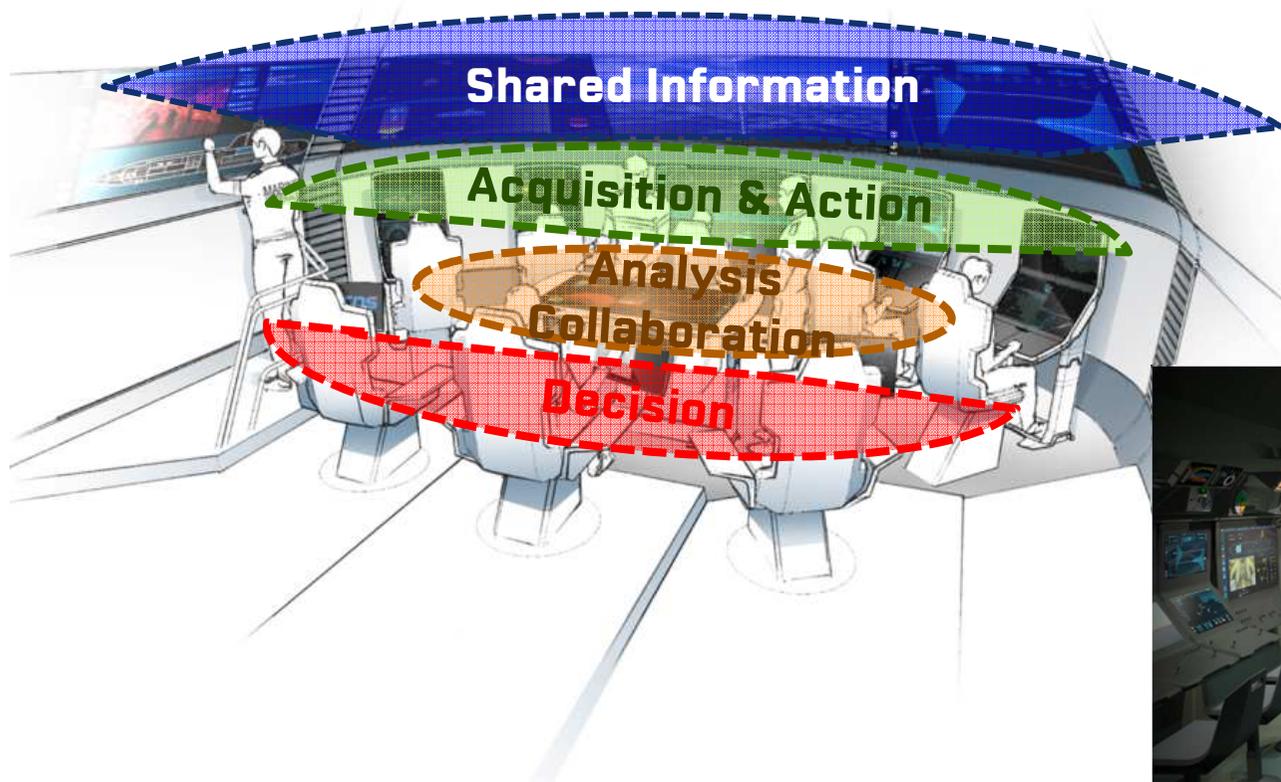


OPERATION EVOLUTIONS

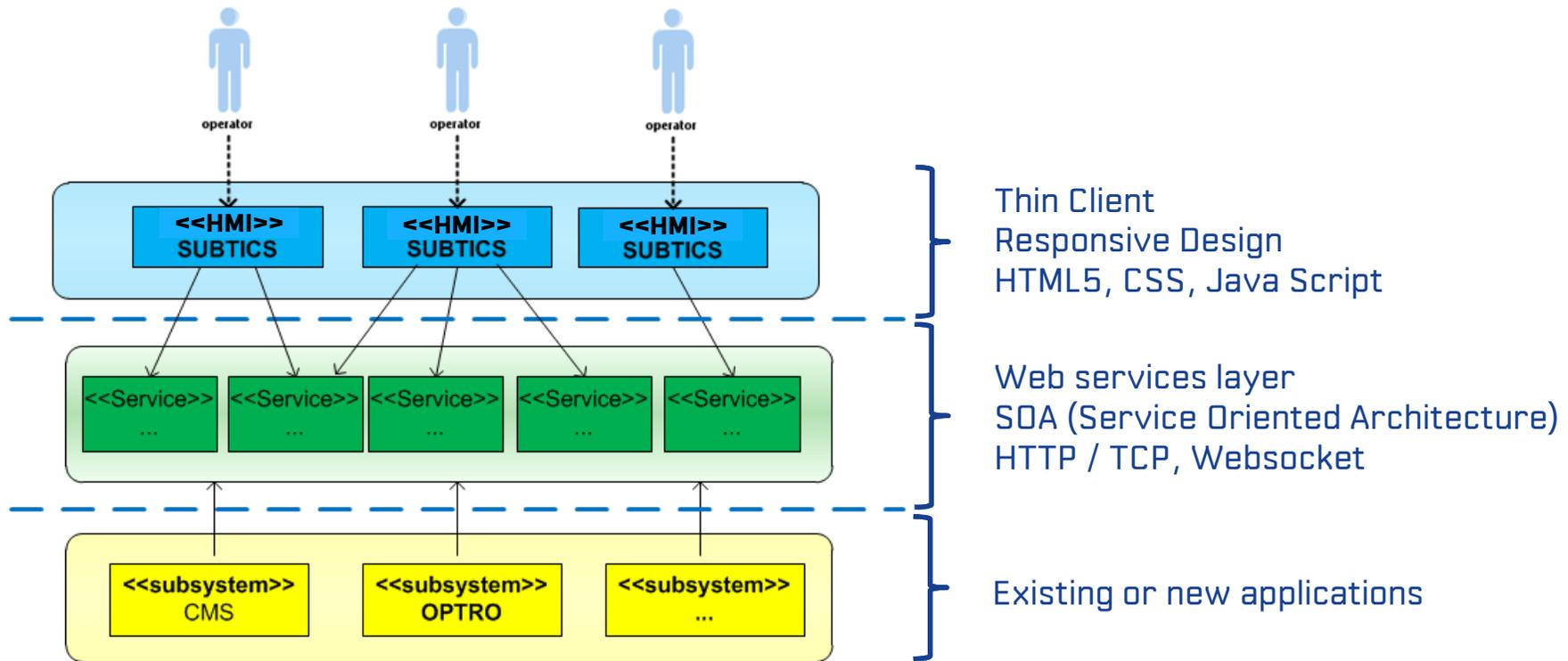
MAIN AXES OF EVOLUTIONS



OPERATION EVOLUTIONS TOWARDS AN INTEGRATED SMART OPERATIONS ROOM

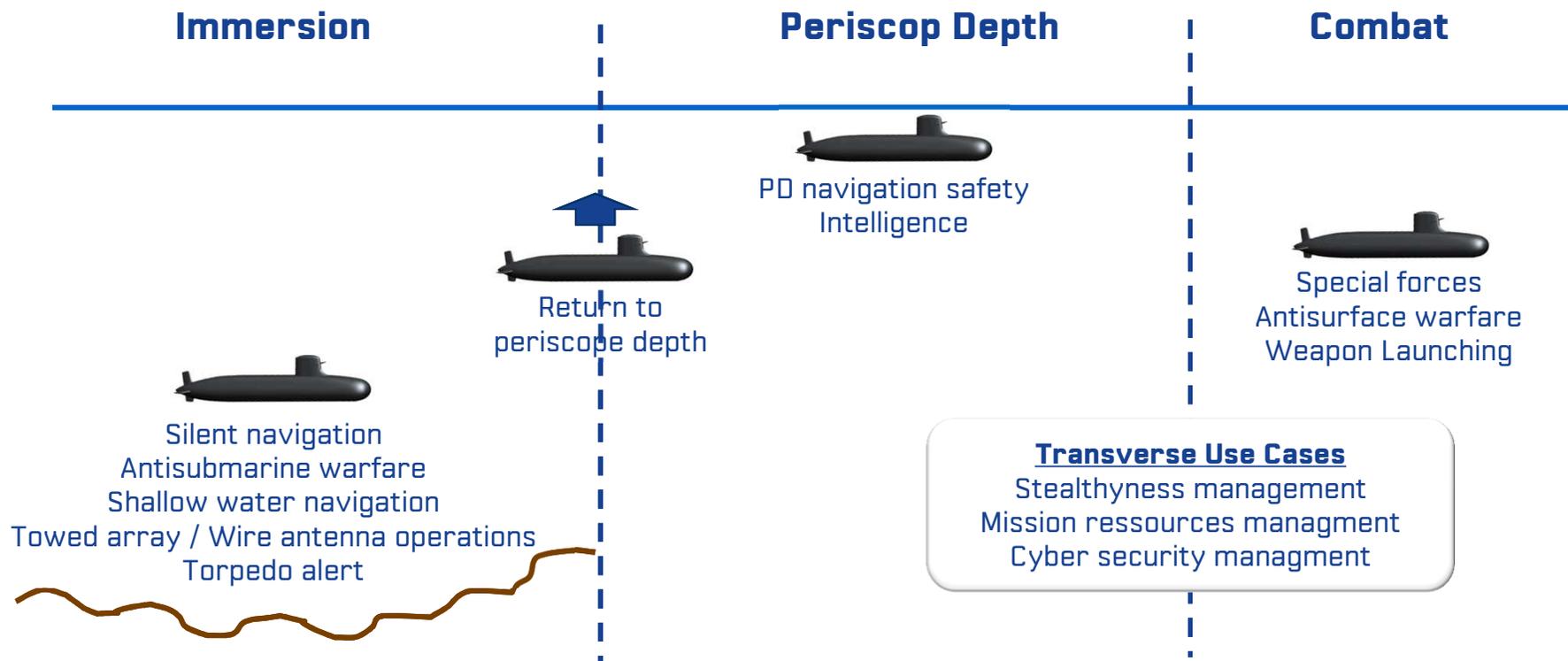


OPERATION EVOLUTIONS TOWARDS A WEB SERVICES ARCHITECTURE

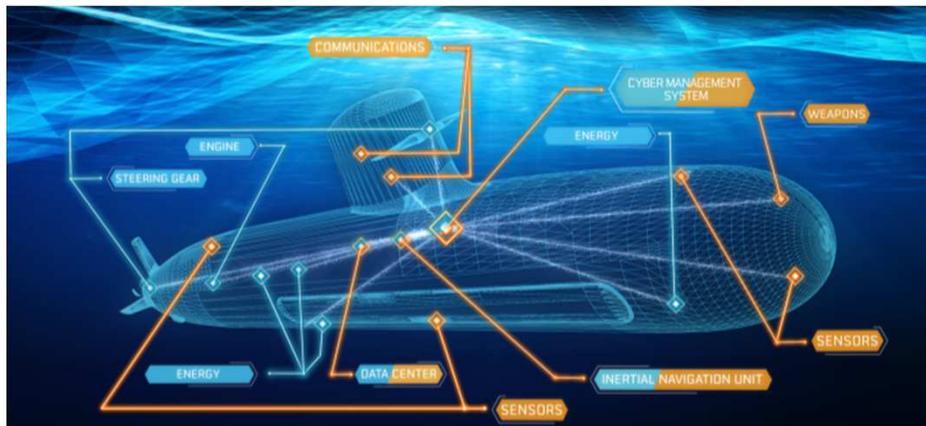


OPERATION EVOLUTIONS

MAIN USE CASES OF OPERATIONAL EFFICIENCY IMPROVEMENT



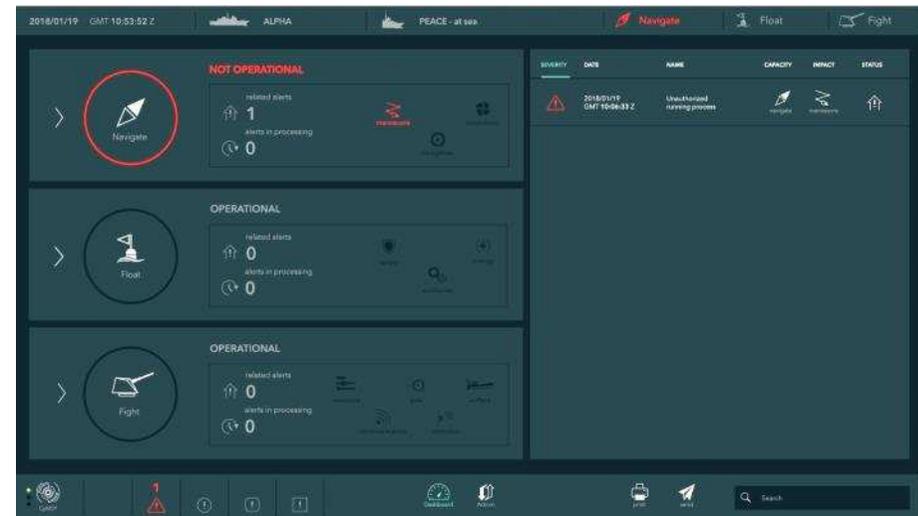
CYBER SECURITY TOWARDS A CYBER SECURED SUBMARINE



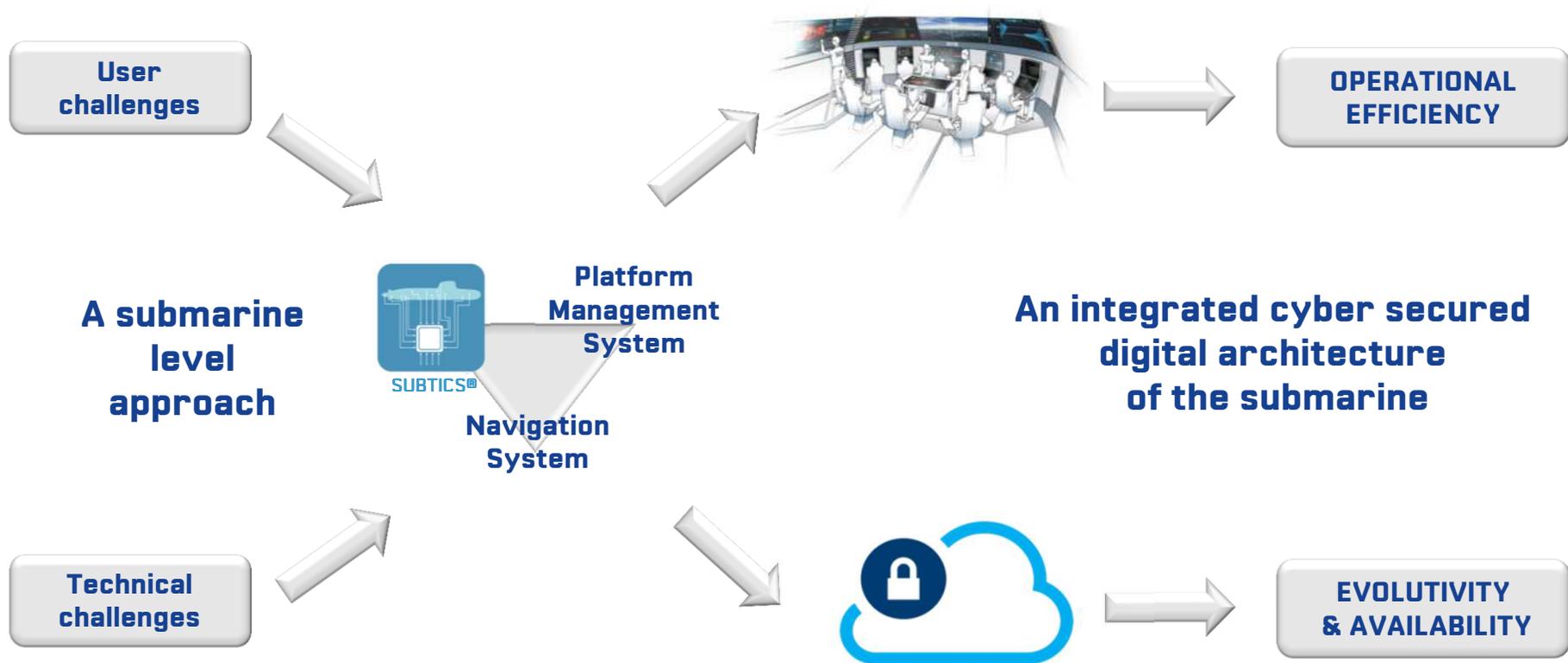
- User centric Cyber Management System
 - Easy to use by a non specialist operator
 - Adapted to submarine constraints

A submarine level approach

- Protection measures by design
 - Cyber secured common computing environment
 - Equipment cyber security requirements
- Cyber Management System



FACING THE FUTURE OF SUBMARINE COMBAT SYSTEMS



NAVAL
GROUP