

# S80 Through Life Support Program



ARMADA

DEFENDEMOS ESPAÑA EN Y DESDE LA MAR

DOLPIN CODE 36

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May 22, 2024

# Navy and Navantia challenge's

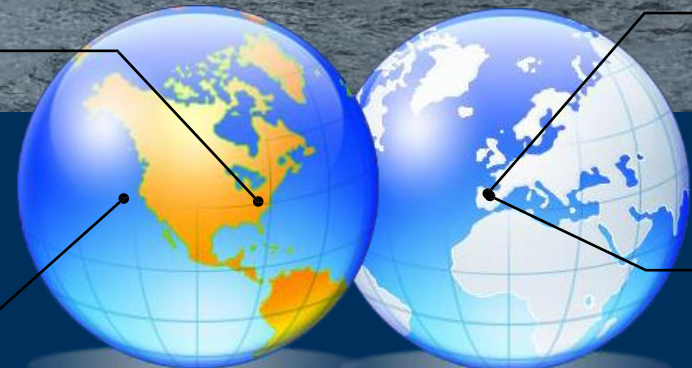


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US Navy



**GENERAL DYNAMICS**  
Electric Boat



Spanish Navy



# S80 must be kept safe in its Life Cycle

Requires well-defined processes



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# New Sustainment Model

**A new environment requires a new Sustainment System**

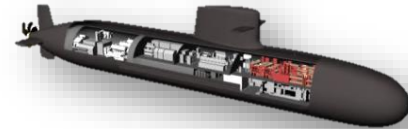
## New Environment:

- High **technical complexity** of the product
- High **participation of key suppliers (OEM)** and collaborating industria
- High complexity of **processes and procedures**
- **Specific processes** aimed at safety (**Safety + CTSUB + FBW**)

**GENERAL DYNAMICS**  
Electric Boat



The S80 requires a new Sustainment System founded on four pillars:



TECHNICAL SUPPORT  
TO THE SYSTEMS



DIGITAL  
TRANSFORMATION

Integrated  
Sustainment



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ORGANIZATIONAL



EFFICIENT PROCESSES

# S80 TLS Spanish Navy Concept and objectives

## New sustainment strategy – Collaborative environment

### POLICY (AJEMA, Sept. 2020)

- Create a **new organization** (Spanish Navy, Navantia and key suppliers) to give **technical consistency and expertise** throughout the ship's life to maintain the **readiness** of the platform (USN model as reference)
- Improve the **digital framework** to sustain S80, assuring secure exchange of information between Spanish Navy and Navantia

### OBJECTIVES

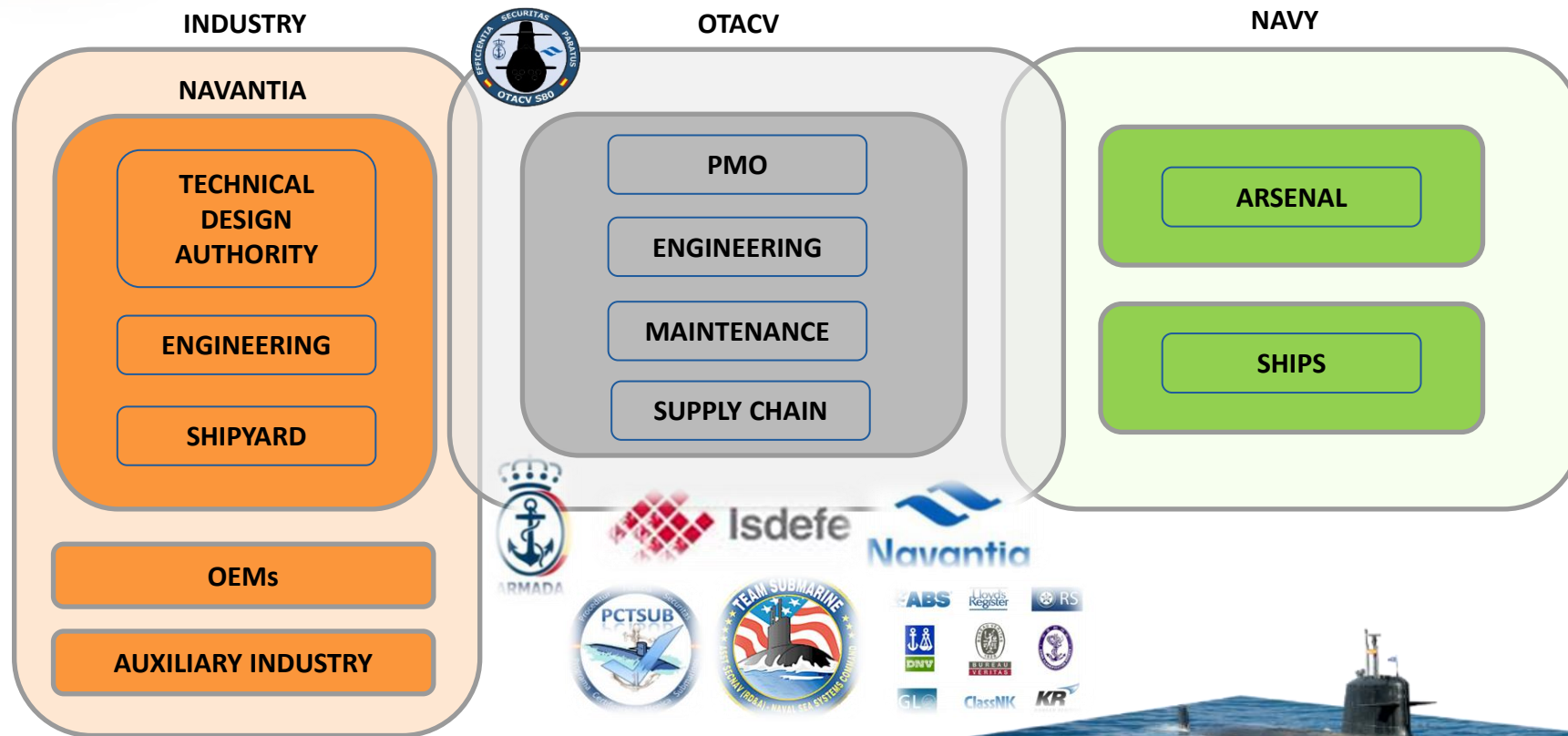
- **Safety:** minimize risks of operating the submarine (configuration control, unique data and safety analysis)
- **Availability:** satisfy the availability requirements and planned service life required
- **Efficiency:** optimize operation and maintenance budgets balancing cost, risk and performance on a data-driven decision making process
- **Knowledge:** retain knowledge and technical capacity, both Navy and Industry, developing suitably qualified and experienced personnel.





# S80 TLS Organizational Structure

Through Life Support Technical Office (OTACV)



OEMs: Original Equipment Manufacturer



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# S80 TLS Program

## Roadmap



Continuous relationship with Suppliers for the Submarine Life Cycle

**TLS Preparation**

**TLS Support Kick Off**



**Delivery**

**2021**

**2023**

**2030**

### Transition Phase

- TLS Team Conformation ACV
- Elaboration of plans (Maint./Supply/Engineer/Mngmt.)
- Elaboration of Agreements with OEM
- Data Management System
- Infrastructure Setting Up
- Establishment of Program KPI's

### First TLS Phase: 7,5 years

- Development of the TLS Activity
- Collecting data and updating ILS
- Cost Reduction Objectives
- Monitoring the level of availability and performance

### Second TLS Phase: X years

- Transferring risk to the industry
- Payment linked to Availability and program performance
- Transfer requirements to the industry
- Development of the TLS Activity
- Cost Reduction Objectives



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# Complex platform TLS (I)

Model-Based Product Support Concept



Asset Management – ISO 55001



## QUALITY ASSURANCE



Quality Assurance – ISO 9001



Business Process Management



Data Governance Management



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# Complex platforms TLS (II)

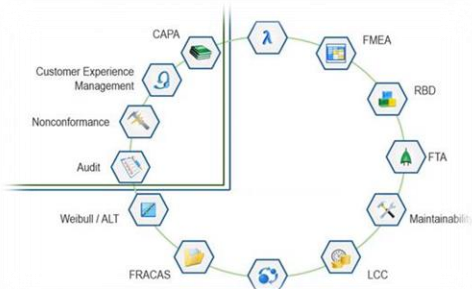
## Model-Based Product Support Concept

Predictive and Prognostic Maintenance

Intelligent Sustainment Management

Condition-Based Maintenance (CBM+)

Digital Training



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# Challenge one - PEOPLE

Cultural change



Design Support:

QinetiQ

SSPA

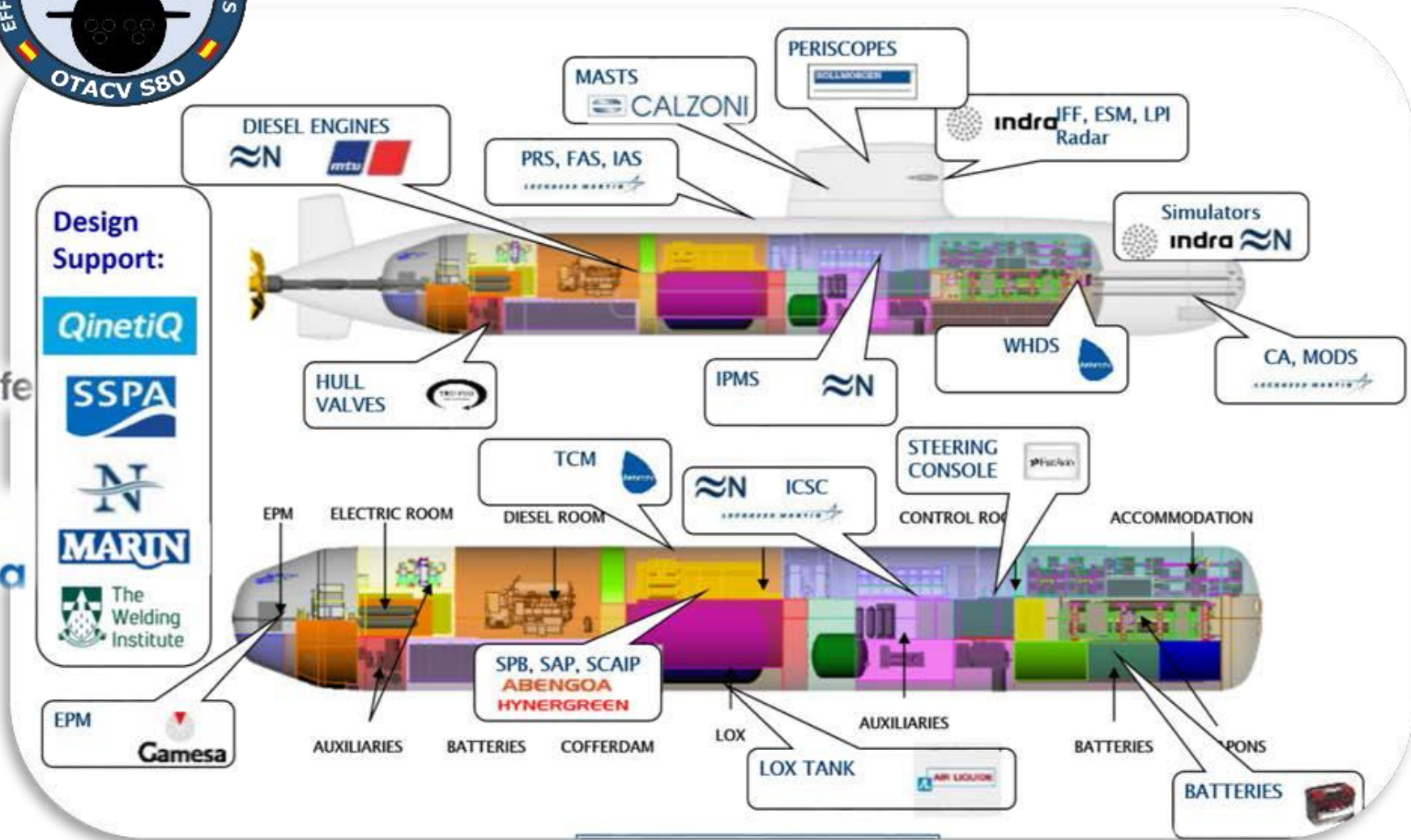
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The Welding Institute

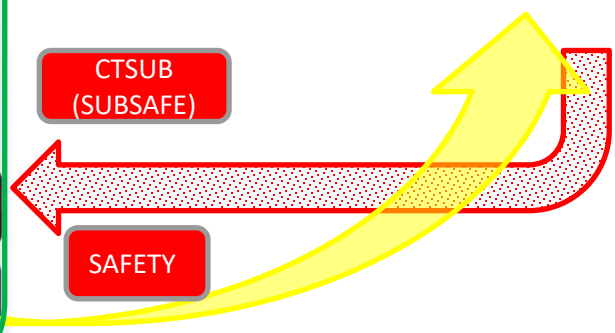
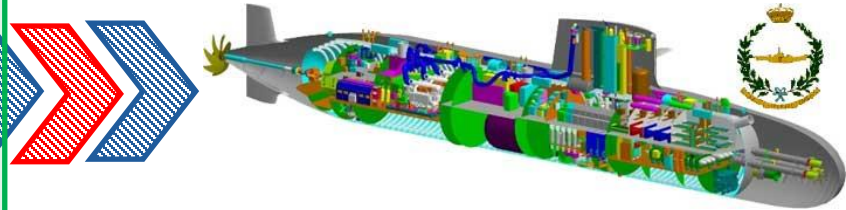
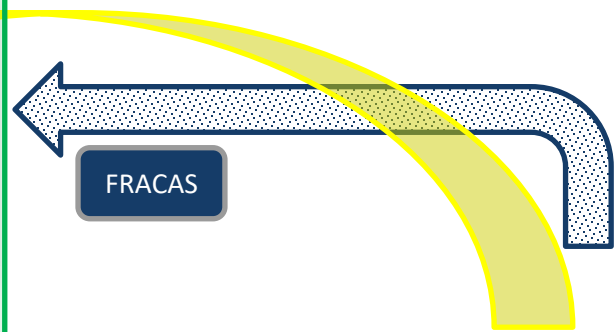
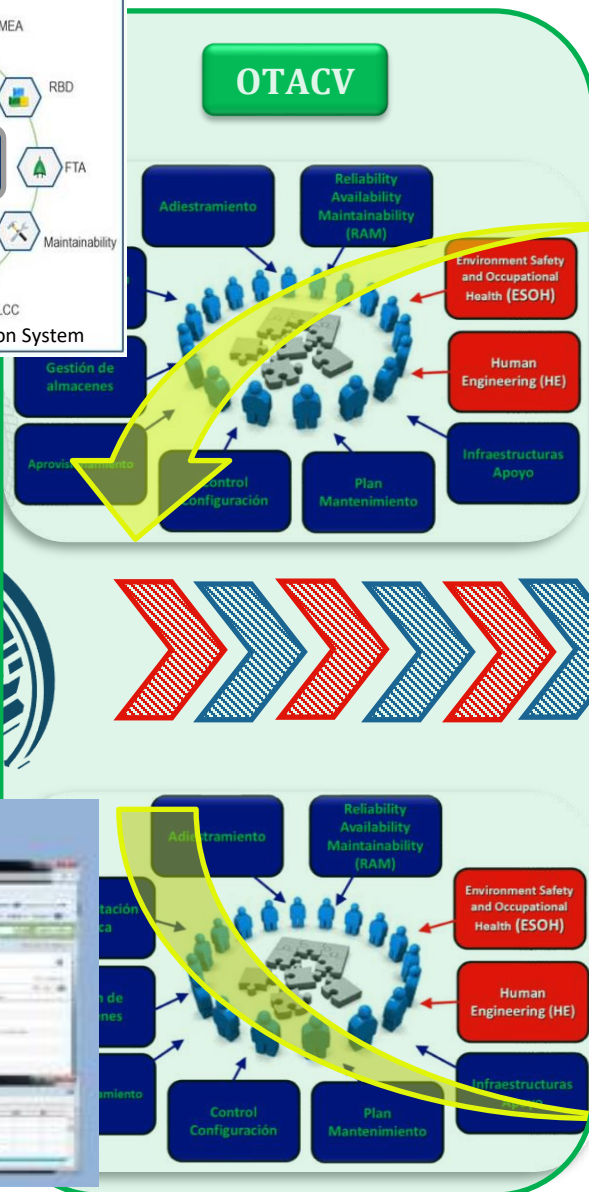
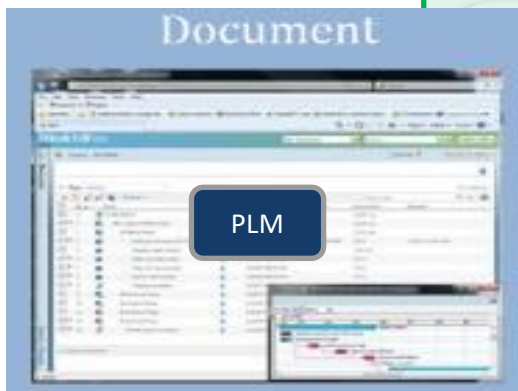
EPM

Gamesa



# Challenge two – PROCESS

## Data exchange



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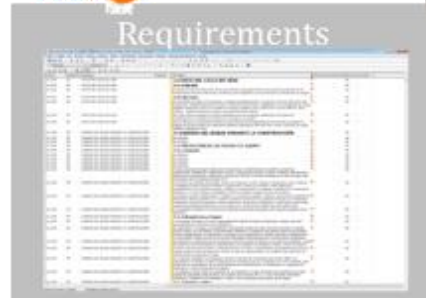
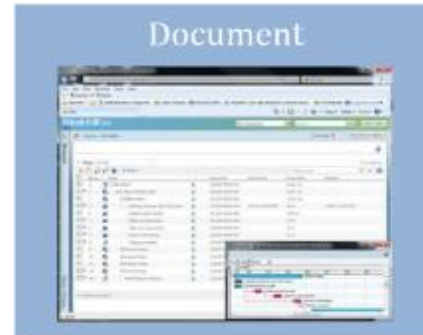
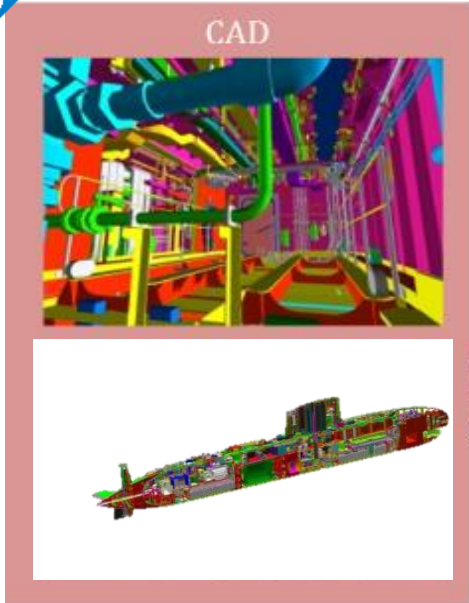


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# Challenge three - TECHNOLOGY

Digital framework

SAP



SIEMENS

IBM



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Thank you for your attention

AD UTRUMQUE PARATUS  
*"Ready for either alternative"*