LAUNCHER OBSOLESCENCE MANAGEMENT - APPLICATION ON ARIANE 6

3rd workshop on REACH regulation and its impact on space sector

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INTRODUCTION : WHAT IS OBSOLESCENCE MANAGEMENT ?

Mission:

- to limit the obsolescence impacts on the product qualification and on the manufacturing processes

- to ensure the production continuity and to maintain the system availability

- to limit the obsolescence impacts on the recurrent costs of a program
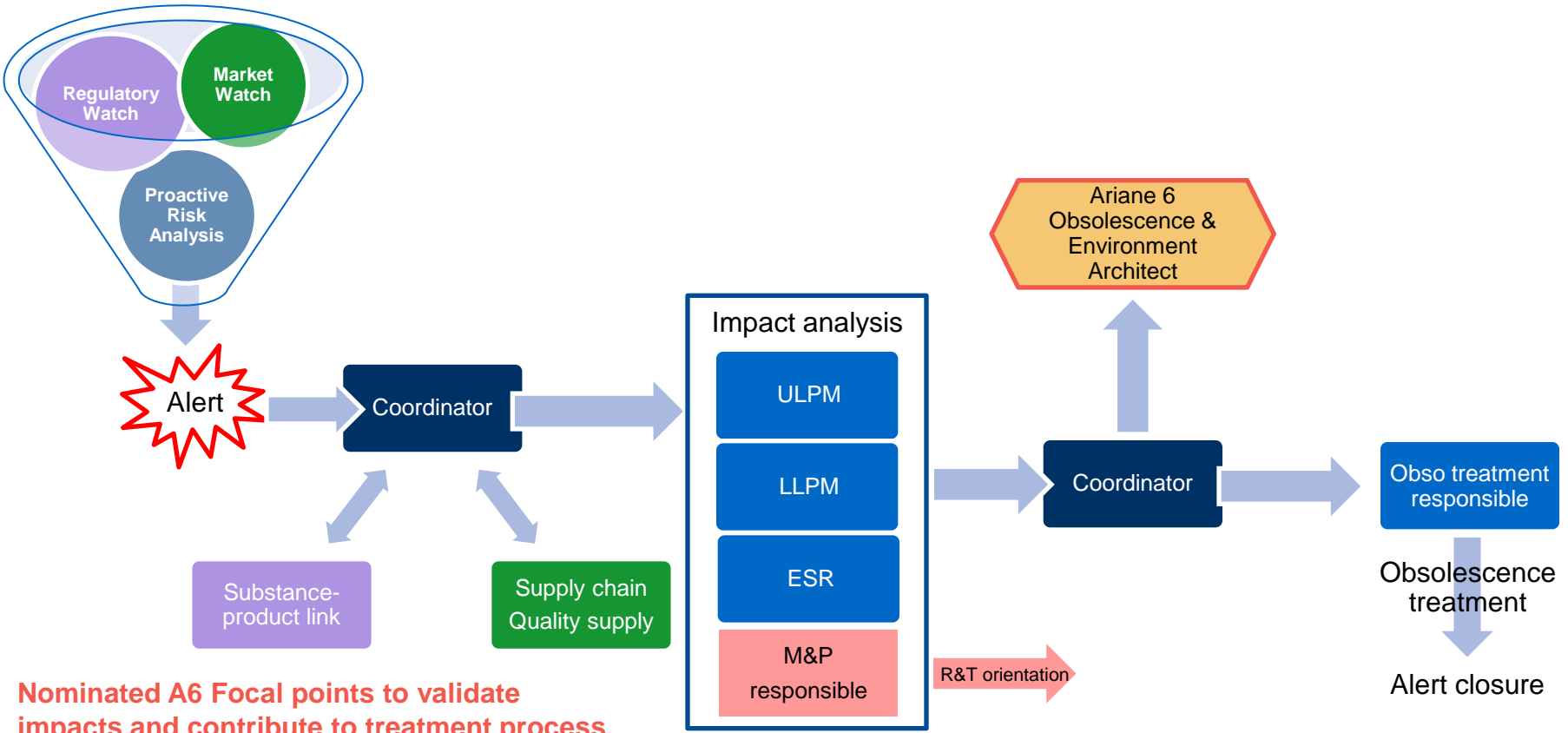
These missions are fulfilled by managing obsolescence risks at company level enabling synergies

Main activities:

- Proactive activities : regulatory watch, market watch and proactive obsolescence risk analysis

- Company impact analysis : Alert management, Impact analysis, Communication toward partners

- Obsolescence treatment : Treatment strategy definition, Risk and Opportunity management

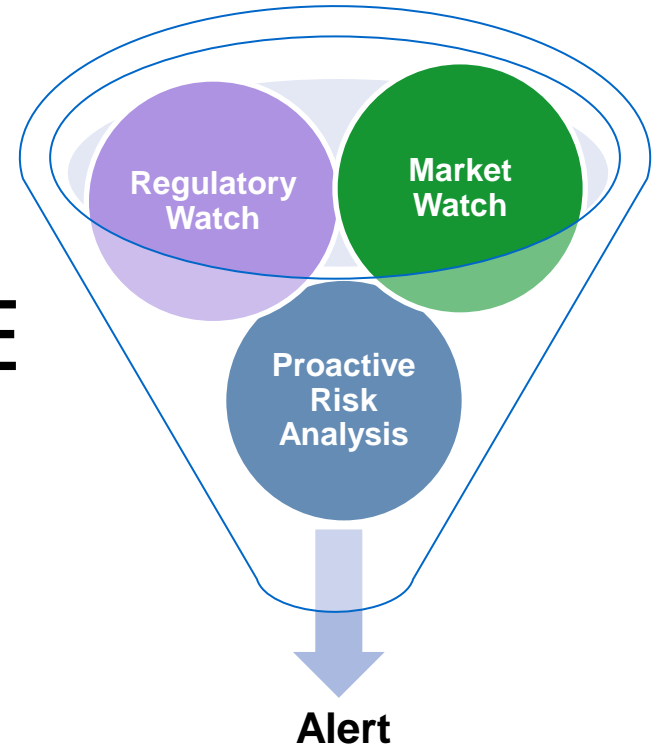➔ *A dedicated organization has been created to ensure these missions and manage these activities*

OBSOLESCENCE ALERTS MANAGEMENT PROCESS

Regulatory Watch

Market Watch

Proactive Risk Analysis

Alert

Coordinator

Substance-product link

Supply chain
Quality supply

Impact analysis

ULPM

LLPM

ESR

M&P responsible

R&T orientation

Ariane 6
Obsolescence &
Environment
Architect

Coordinator

Obso treatment
responsible

Obsolescence
treatment

Alert closure

Nominated A6 Focal points to validate impacts and contribute to treatment process

01
SURVEY & COMPLIANCE

Regulatory Watch

Market Watch

Proactive Risk Analysis

Alert

REGULATORY WATCH

Regulatory Watch

→ SSE/Export control responsibility

Global EU regulatory watch

- REACh

- RohS

- POP - Persistent Organic Pollutant

- ODS - Ozone Depletion Substance

- CLP - Classification Labelling Packaging including CMR classification

- F-Gas

- PACT list   …

- → Implies dedicated resources, organizations and network

SSE regulatory watch

- OEL - occupational exposure limit (VLEP)
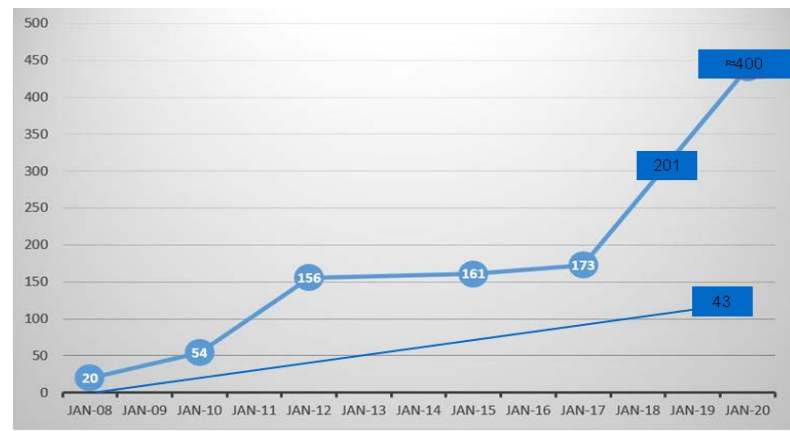
Export control regulation (ITAR …)

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REACH CONCERNS

REACH implies a permanent adaptation…

- SVHC criterion survey

- Survey of evolutions : nanomaterials, polymers, waste framework directive (SCIP database), …

- Registration dossiers maintenance and improvement

- Authorization :

    - Chromium Trioxide dossier (CTAC),
    Strontium chromate,
    D-chromated Na & K (CCST)

    - Dossier format updated with substitution plan required

ECHA is continuously updating its screening ….

Title 1 : evolution of Candidate List and Annex XIV
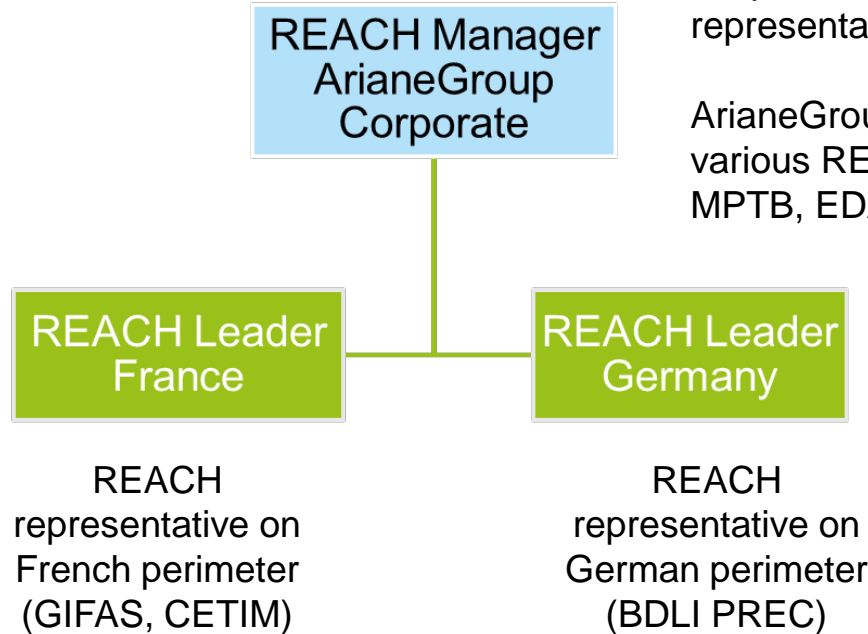
REACH CONCERNS

Main Ariane 6 Concerns at mid-term

- **Lead** (Candidate List)

- **Boric acid** and borates (Candidate List) – **Ni salts** (draft for new OEL)

- **Di-isocyanates** (draft of Restriction) – cross-linking agent of HTPB in solid propellants and binders

- **Octyl-phenol** & **nonyl-phenol** (Annex XIV) – no-exhaustive list of CAS

- **Bis-Phenol A** (Candidate List) – intermediate/full substance – widely used in epoxies

→ ECHA is continuously updating its screening ….

REACH ORGANISATION WITHIN ARIANEGROUP

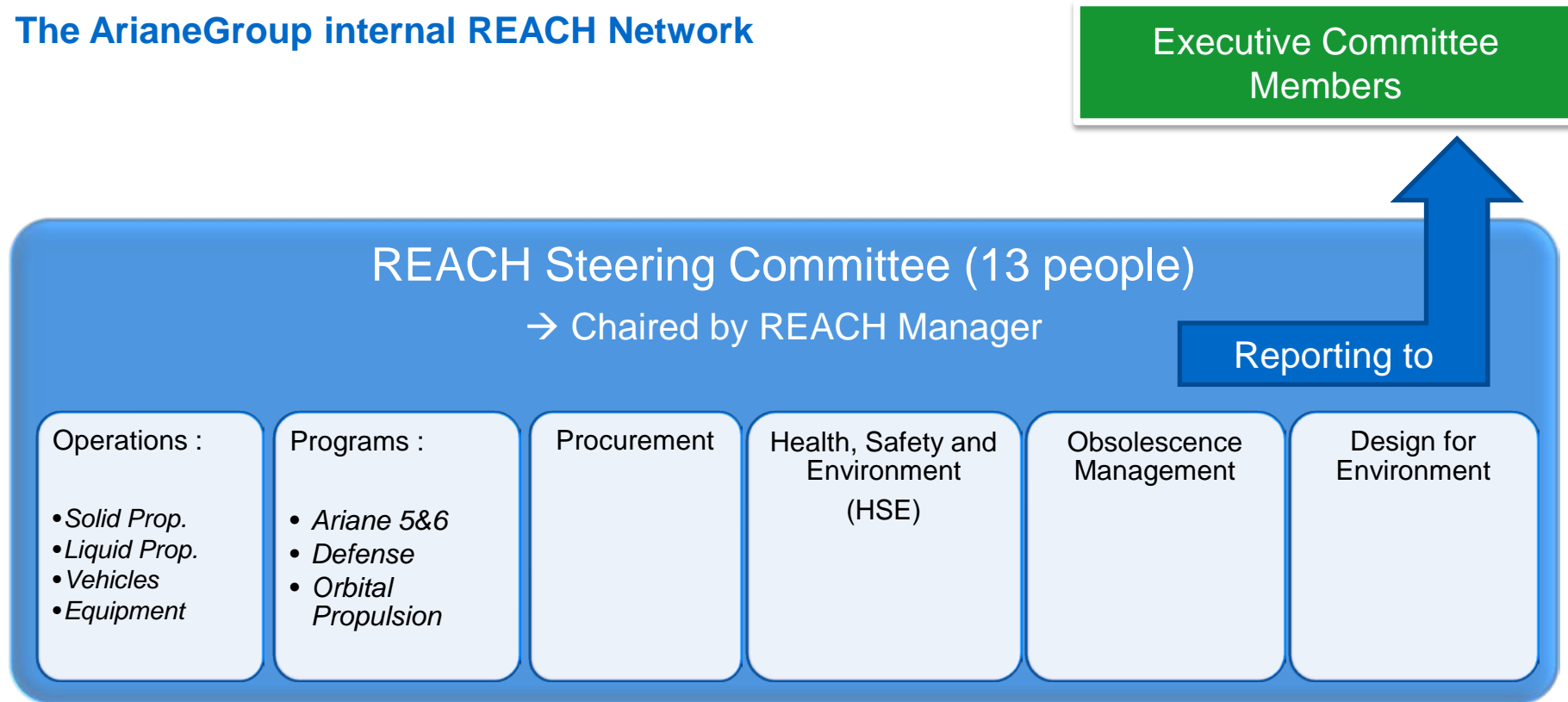## REACH Team and its external interfaces

REACH Manager at ArianeGroup
Corporate Level, acting as the company
representative.

ArianeGroup is currently represented on
various REACH working groups like ASD,
MPTB, EDA, …

REACH Manager
ArianeGroup
Corporate

REACH Leader
France

REACH Leader
Germany

REACH
representative on
French perimeter
(GIFAS, CETIM)

REACH
representative on
German perimeter
(BDLI PREC)

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THE REACH ORGANIZATION WITHIN ARIANEGROUP

The ArianeGroup internal REACH Network

Executive Committee Members

REACH Steering Committee (13 people)

→ Chaired by REACH Manager

Reporting to

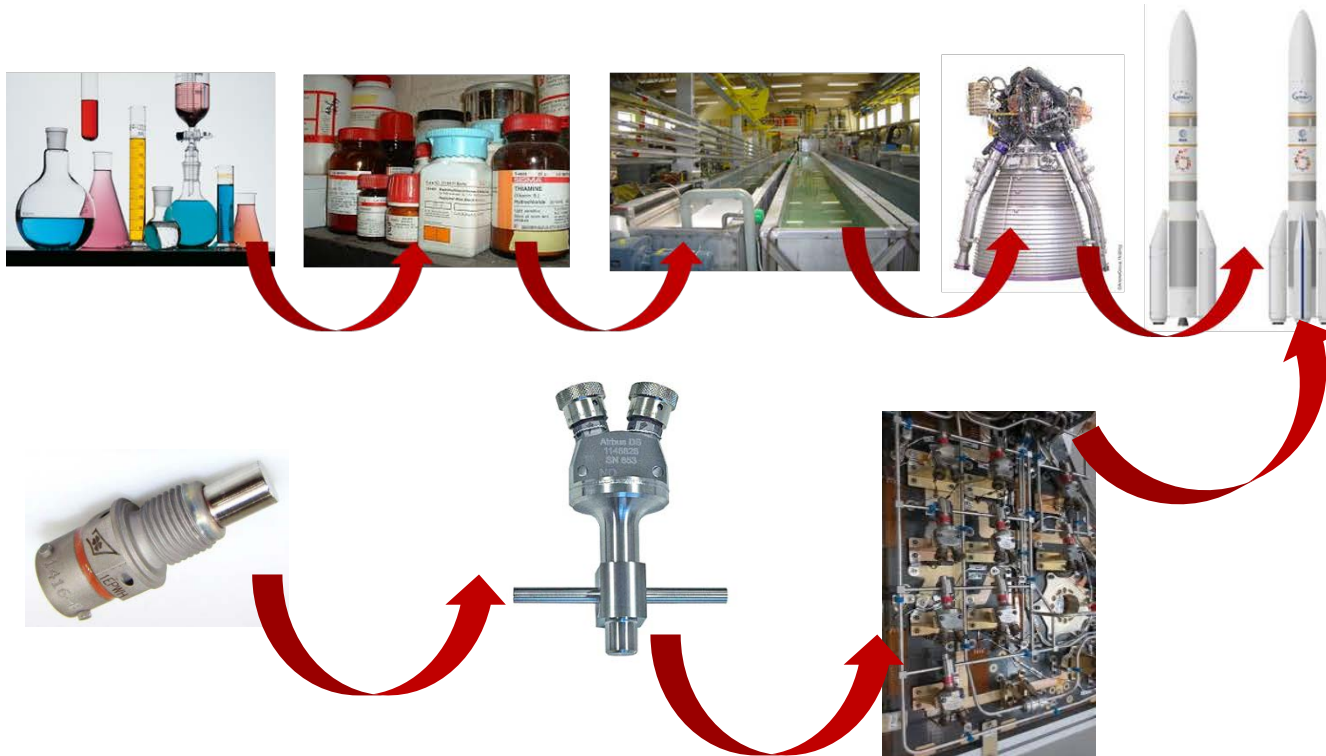| Operations :	Programs :	Procurement	Health, Safety and Environment (HSE)	Obsolescence Management	Design for Environment
• *Solid Prop.* • *Liquid Prop.* • *Vehicles* • *Equipment*	• *Ariane 5&6* • *Defense* • *Orbital Propulsion*				

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ACTIVITIES WITH OUR PARTNERS

Since many years ArianeGroup experts are involved in coordinated actions with our industrial partners (GIFAS, BDLI, MPTB, Eurospace and ASD)

- The **MPTB** is a forum to share information and to decide if further coordinated actions are required

- The **Hydrazine Task Force** has been launched in 2011 and issued a position paper sent to ECHA and EC

- The **Space Task Force for Chrome 6** uses in space industry has been set up in 2013 and prepared a Socio-Economic Analysis which had been forwarded to ECHA as a supporting document to the CTAC authorization dossier

- Recently the **LEAD Task force** and **Waste Framework Directive** for coordination with space actors and potential lobbying actions

REACH REGULATION IMPACT

Substances … and articles all along the supply chain

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MARKET WATCH

Market Watch

→ **Supply chain responsibility**

Procurement teams are generally in charge of market watch

Obsolescence alerts may be raised through :

- **Regular orders**

- **Contract updates or contractual meetings**

- **Specific audit**

- **…**

Obsolescences not easy to anticipate (ex : sensors, …)

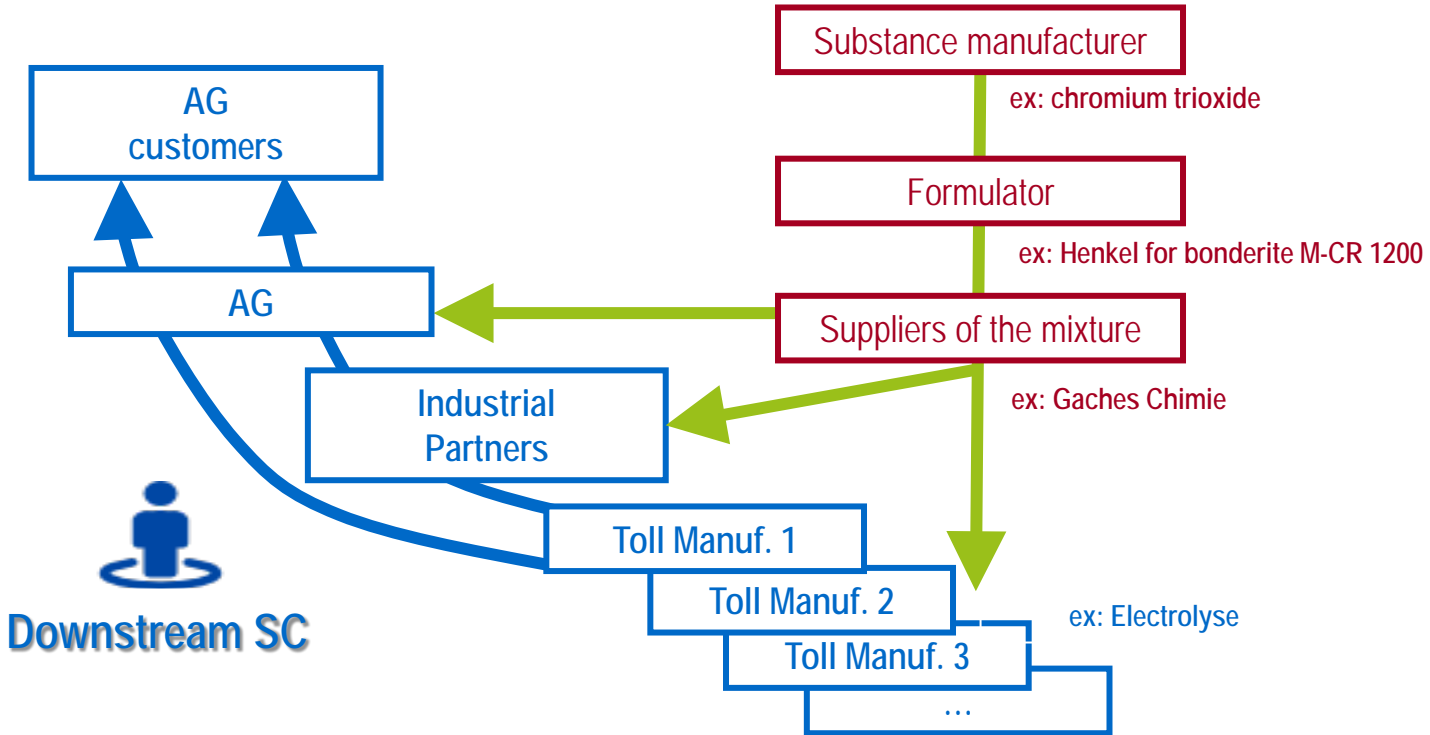# PROACTIVE RISK ANALYSIS

Proactive Risk Analysis

→ **Obsolescence management responsibility**

Risk analysis with several criterion

- Topic 1 : Regulatory aspect

  - health and safety constraints, export control

- Topic 2 : Supply chain evolution or stop of production

  - Bankruptcy, case of absolute necessity, supplier industrial strategy

- Topic 3 : Difficulties of supply

  - Product under allowance, irregular production flow

- Topic 4 : Quality issues

  - Answer no more to industrial needs

- Topic 5 : "Alert network"

  - Any alert coming from in-house and external network

- Topic 6 : Gravity

  - Strategic storage possibility, available replacement solution, qualification roadmap

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IMPACTS ON THE WHOLE SUPPLY CHAIN

Substance manufacturer

ex: chromium trioxide

Formulator

ex: Henkel for bonderite M-CR 1200

Suppliers of the mixture

ex: Gaches Chimie

ex: Electrolyse

AG customers

AG

Industrial Partners

Toll Manuf. 1

Toll Manuf. 2

Toll Manuf. 3

…

Upstream SC (substance SC)

Downstream SC

02

A6 CONTEXT &

NEW FRAMEWORK

CONTEXT

Ariane 6 is a new launcher developed in the frame of a renewed industrial organization :
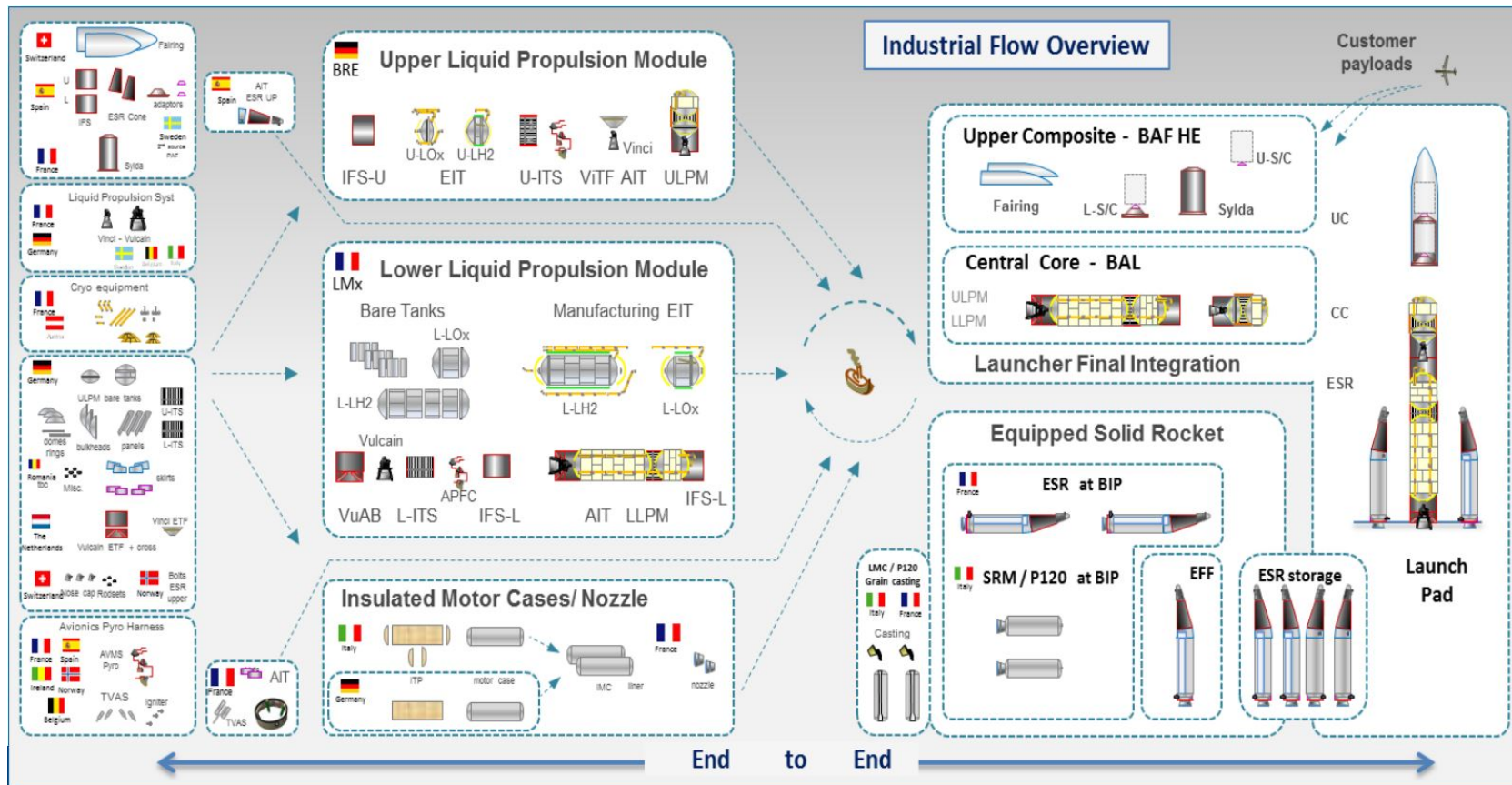
- Governance framework has changed between Ariane 5 and Ariane 6

- ArianeGroup is dealing with industrial partners

- And partners are in charge of their own obsolescence survey / obsolescence treatment

A lot of stakeholders involved on Ariane 6

Working together is possible through the extended enterprise concept

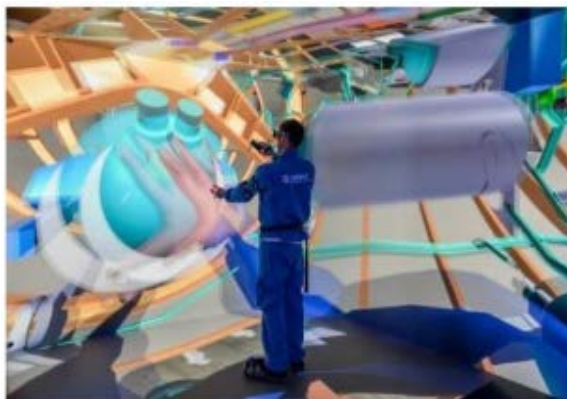# INDUSTRIAL ORGANIZATION

NEW DESIGN AS AN OPPORTUNITY

Designed for production and integration

New technologies

- Opto pyro, Avionic

- No more Chrome 6 → Introduction of qualified replacement solution

Augmented reality

New manufacturing process

- Additive manufacturing (ALM)
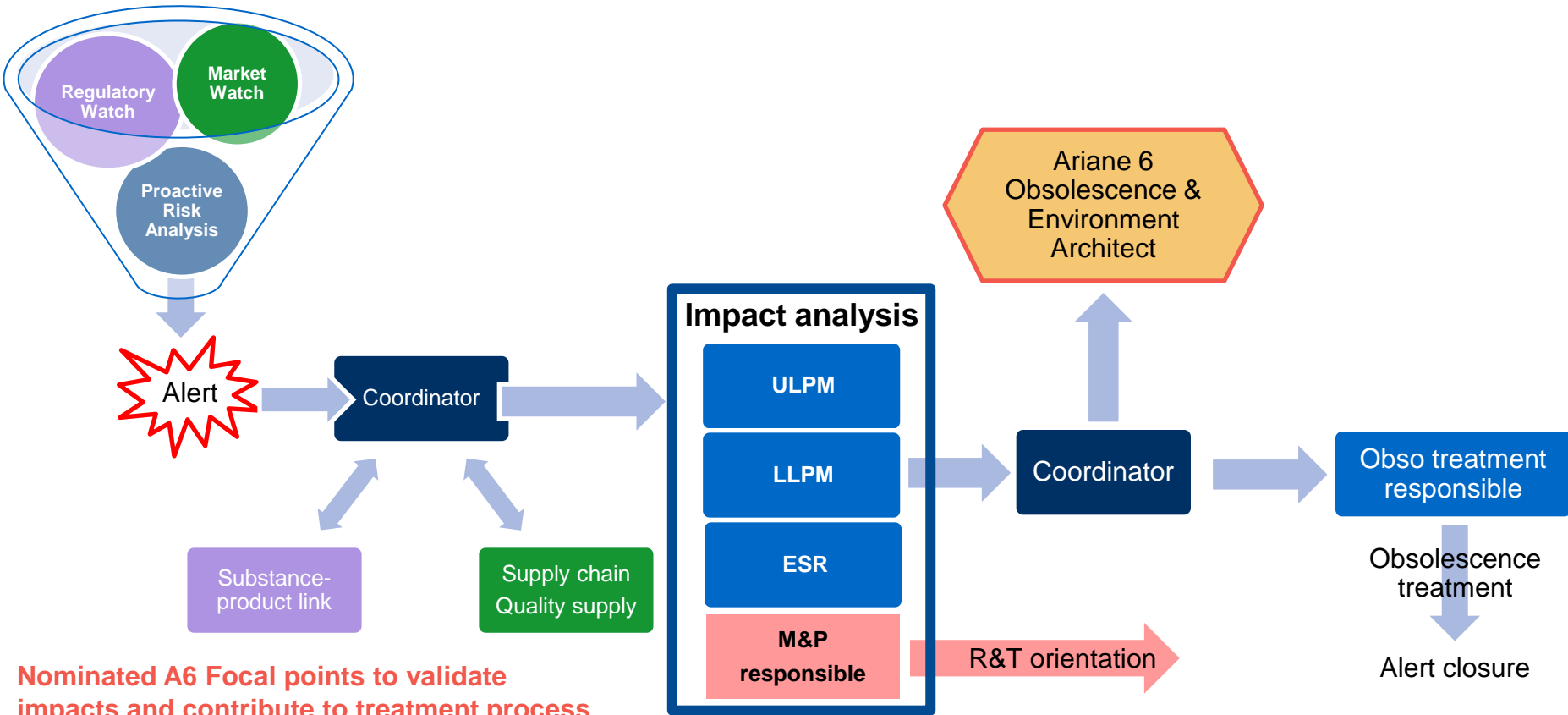- Friction Steer Welding (FSW)

Standardization

- Standard parts
- Products on the shelf
- Reduce « Ariane customized » products

03
OBSOLESCENCE TREATMENT

OBSOLESCENCE MANAGEMENT PROCESS

Nominated A6 Focal points to validate impacts and contribute to treatment process

AND IN CASE OF …

Nowadays, it's mandatory to continuously adapt our way of working

Although all anticipation activities, survey, regulatory watch, always possible :

- Stop of supplier,

- Any major event,

- Importation threshold,

- Stop of manufacturing, …

Teams needs to be reactive

CONCLUSION

In a constantly changing environment, REACH management and regulatory watch are a day to day activity → Anticipation activities are key for the sustainability of space products.

ArianeGroup is deeply involved in the implementation of REACH and obsolescence management activities.

Obsolescence teams are well established within ArianeGroup operational clusters :

- Optimized in view of Ariane 6 obsolescence management
- Involved in several network sharing to maximize our chance to anticipate

This ESA workshop is a welcomed opportunity for this sharing !

#spaceenablers