

EDA ACTIVITIES ON REACH:

promoting military capabilities and sustainability in the defence sector

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MPTB REACH Stakeholders Day

11 June 2019, ESA ESTEC, NL



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INTRODUCTION ABOUT THE EUROPEAN DEFENCE AGENCY

FACTS & FIGURES

Only EU Agency whose Steering Board meets at ministerial level



27 Member States

(all EU members except Denmark)

Administrative Arrangements

with Norway, Serbia, Switzerland and Ukraine

Budget 2018

€32.5 Mio

EDA Portfolio:

ca. **300 activities** related to capability development,
R&T and defence industry

Value R&T projects 2004-2017 run within EDA:

approx. **€1 billion**

MAIN MISSION

... to support the Council and the Member States in their effort to improve the Union's defence capabilities in the field of crisis management and to sustain the CSDP*

* Council decision 2015/1835 of 12 October 2015 on statute, seat and operational rules of the EDA

A PROACTIVE HUB FOR THE EUROPEAN DEFENCE COMMUNITY

EDA stakeholders

Partner organisations in improving European military capabilities

(e.g. OCCAR, EATC, NATO)

Key partners in civil-military coordination

(e.g. European Commission, EU Agencies, ESA, Eurocontrol, SESAR)

Industry,
through ASD & NDIAs



EDA PRIORITY WORKSTRANDS

SUPPORT

the development of **key capabilities**
structuring European defence



+

STIMULATE

defence **R&T** to prepare the capabilities
of tomorrow and support the EDTIB



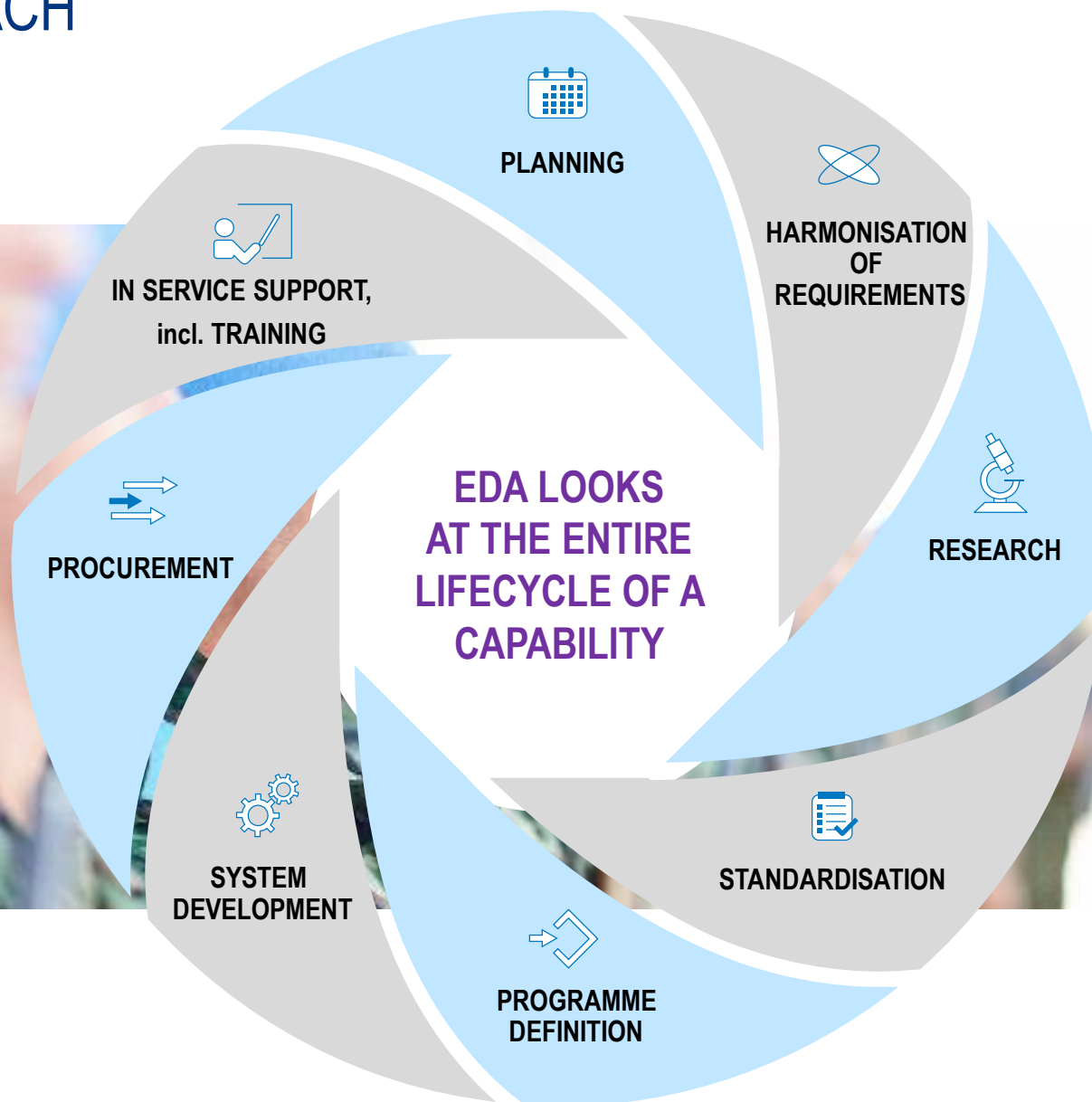
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ENSURE

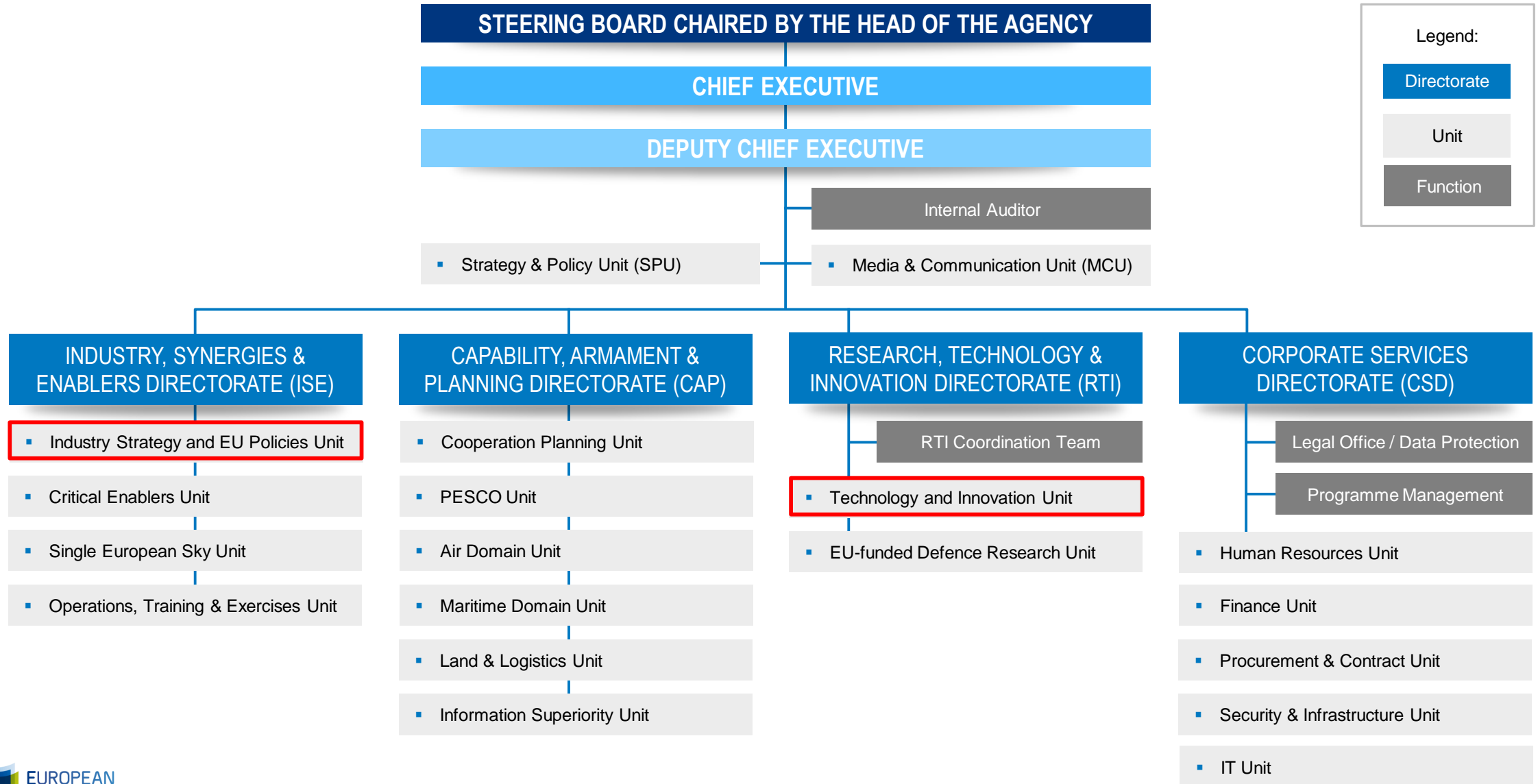
that military interests are taken
into account in **wider EU policies**



LIFECYCLE APPROACH



ORGANISATION





EDA REACH ACTIVITIES

EDA REACH ACTIVITIES

- Since 2009
- **Continuous interaction-cooperation with/support by all EU competent stakeholders** Member States, European Commission, ECHA, ESA, European defence industry; (also US Department of Defence and US industry)
- **Wide EDA network of Member States REACH experts**
 - **EDA REACH Task Force** [experts from 10 MS (DE, EL, ES, FI, FR, IT, NL, RO, SE, UK) and NO] supporting EDA at technical level.

EDA only forum for structured dialogue - central role as military coordinator on REACH defence-related issues

EDA REACH Webpage:

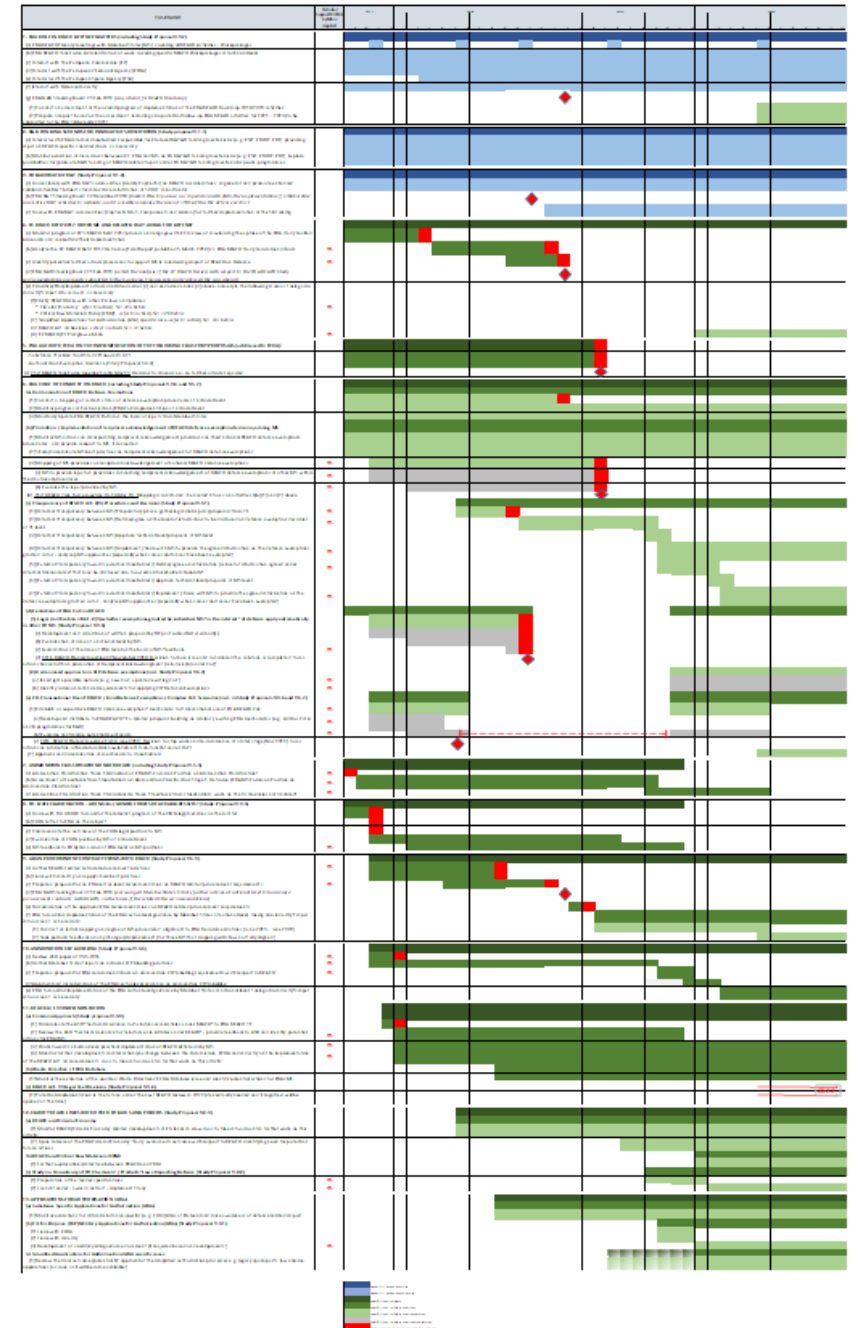
<https://www.eda.europa.eu/what-we-do/activities/activities-search/reach/>



EDA REACH Roadmap 2018 - 2020

- ❖ adopted Oct 2017 – implementation in progress
- ❖ Facilitating **common prioritised - coordinated actions**, in close cooperation with stakeholders (EC, ECHA and industry) and with the support of the EDA REACH Task Force;
- ❖ Supporting the main purpose of REACH, while **mitigating its impact on Defence and ensuring the operational effectiveness** of the European Armed Forces.

available at: <https://www.eda.europa.eu/docs/default-source/documents/eda-reach-roadmap-2018-2020--gant-chart-as-of-6-june-2019.pdf>



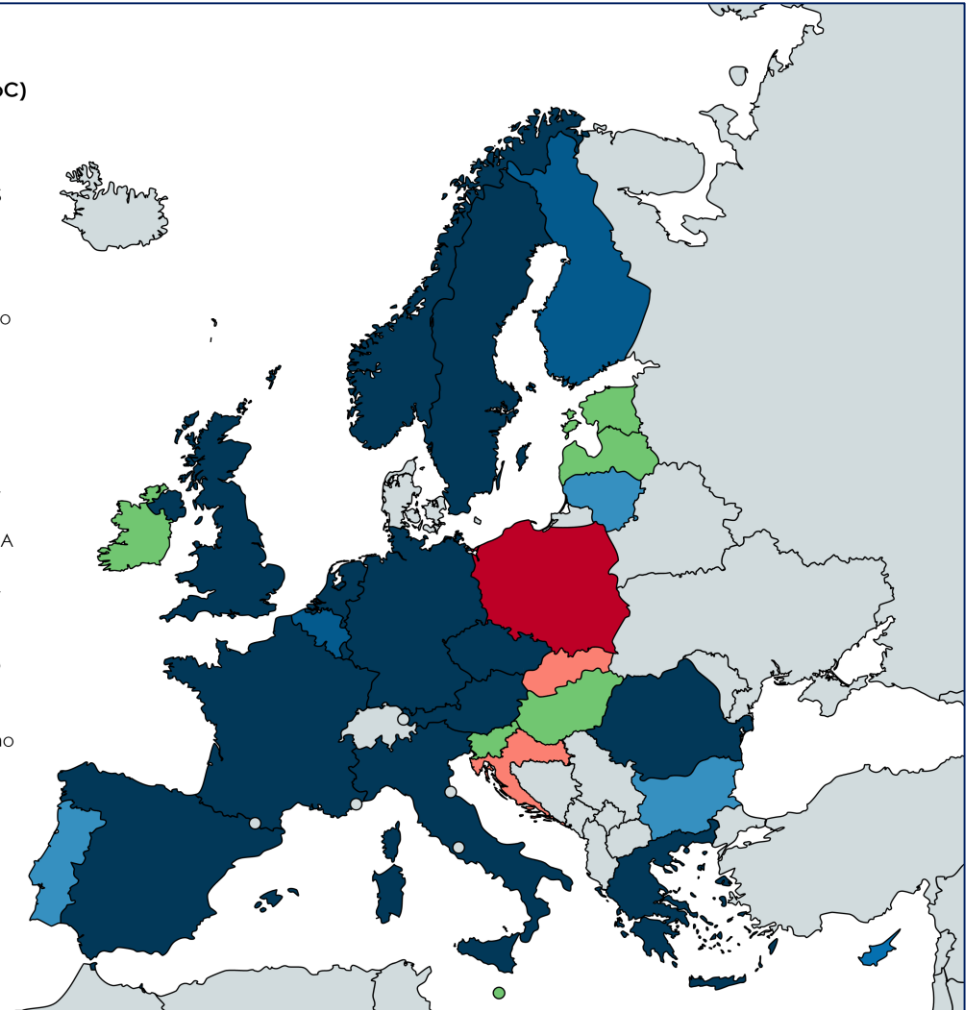
Harmonisation of National REACH Defence Exemptions Procedures

- Article 2(3) REACH on REACH Defence exemptions.
- **EDA Code of Conduct on REACH Defence Exemptions**
adopted Mar 2015
- Not a panacea - defence exemptions only as a last resort solution
- **EDA REACH PORTAL**: MS voluntary information on national procedures for granting defence exemptions (incl. number of exemptions granted) → **increase transparency.**

<http://reach.eda.europa.eu/>

Harmonisation of National REACH Defence Exemption Procedures, on the basis of the EDA Code of Conduct (CoC) on REACH Defence Exemptions

- National procedure exists - aligned with EDA CoC: 12 MS (AT, CZ, DE, EL, ES, FR, IT, LU, NL, RO, SE, UK) + NO
- National procedure exists - mostly aligned/small differences with EDA CoC - no further actions are envisaged: 2 MS (BE, FI)
- National procedure exists - not aligned/differences exist - in process to be aligned with EDA CoC: 1 MS (CY)
- National procedure does not exist yet - in process to develop one aligned with EDA CoC: 3 MS (BG, LT, PT)
- National procedure does not exist - to be developed in the future, if needed, taking into account the EDA CoC: 6 MS (EE, HU, IE, LV, MT, SI)
- National procedure exists - not aligned with EDA CoC - no further actions are envisaged: 2 MS (HR, SK)
- Not subscribed to EDA CoC - potential subscription under national examination: 1 MS (PL)



EDA CoC available at:

<https://www.eda.europa.eu/info-hub/press-centre/latest-news/2015/06/23/member-states-implement-code-of-conduct-on-reach>

EDA Study on the Impact of REACH (and CLP) on Defence

- **Final Report: Dec 2016**
- **Concluding on the impact of REACH / CLP on defence stakeholders (MoDs + defence industry):**
“REACH and its processes, may impact the actual operability of Member States’ Armed Forces, especially considering the long lifecycles of military equipment.”
- **Recommendations:**
 - **For improvement of REACH regulation and its processes → EC + ECHA (EC 2017 REACH Review)**
 - **For further work on mitigating impact of REACH on defence → EDA + MS MoDs + Defence Industry.**

available at: <https://www.eda.europa.eu/docs/default-source/reports/eda-reach-study-final-report-2016-december-16-p.pdf>

REACHLAW

STUDY ON
THE IMPACT OF REACH AND CLP
EUROPEAN CHEMICAL REGULATIONS
ON THE DEFENCE SECTOR
FINAL REPORT
16 DECEMBER 2016

COMMISSIONED BY:
European Defence Agency (EDA)
Rue des Drapiers 17-23, B-1050 Brussels, Belgium
www.eda.europa.eu
EDA reference: 16.ESI.OP.038

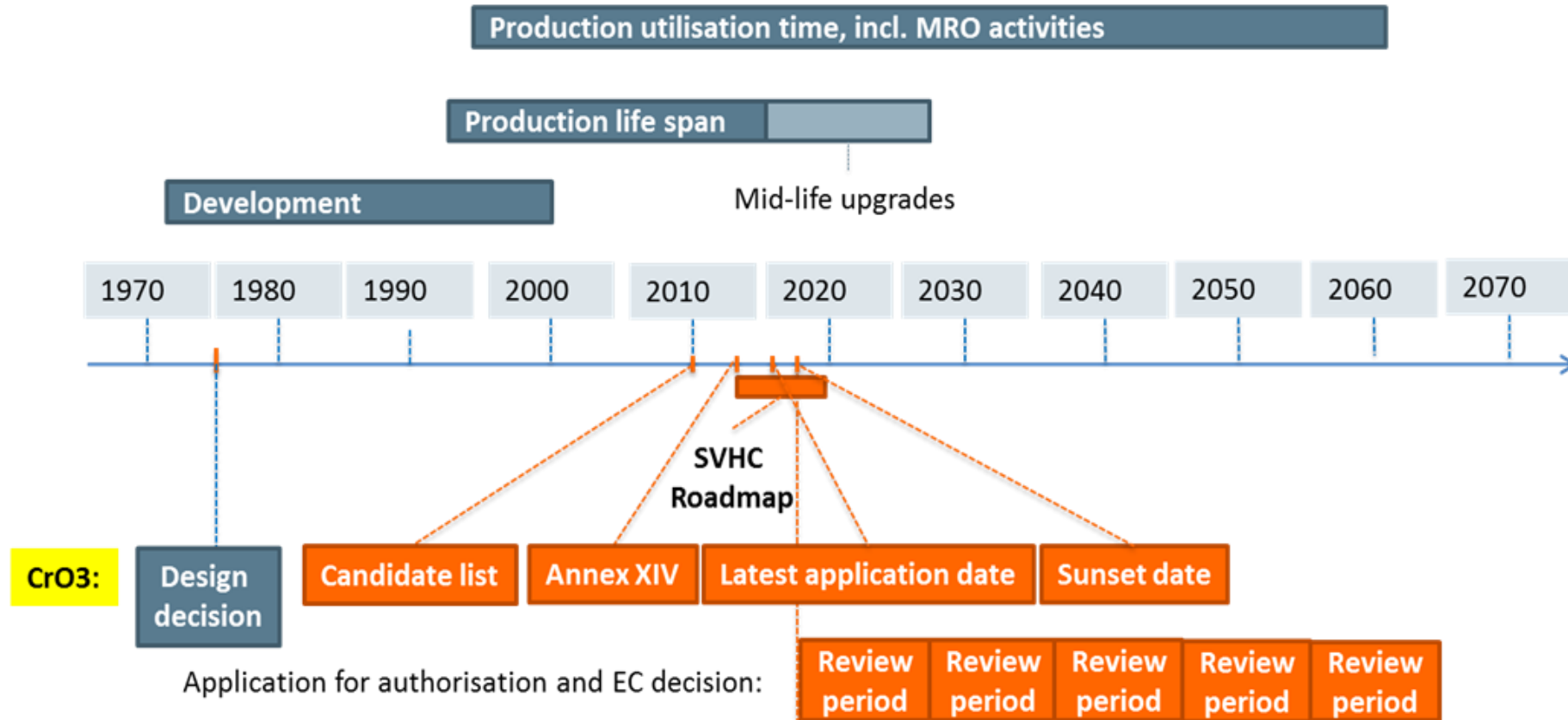
CONTRACTOR:
REACHLaw Ltd.
Vänrikinkuja 3 JK 21, FI-02600 Espoo, Finland
www.reachlaw.fi
REACHLaw reference: RL-QV-2016-12-5

THIS STUDY WAS COMMISSIONED BY THE EUROPEAN DEFENCE AGENCY. THE STUDY DOES NOT, HOWEVER, EXPRESS THE AGENCY'S OFFICIAL VIEWS. THE VIEWS EXPRESSED AND ALL RECOMMENDATIONS MADE ARE THOSE OF THE AUTHORS.

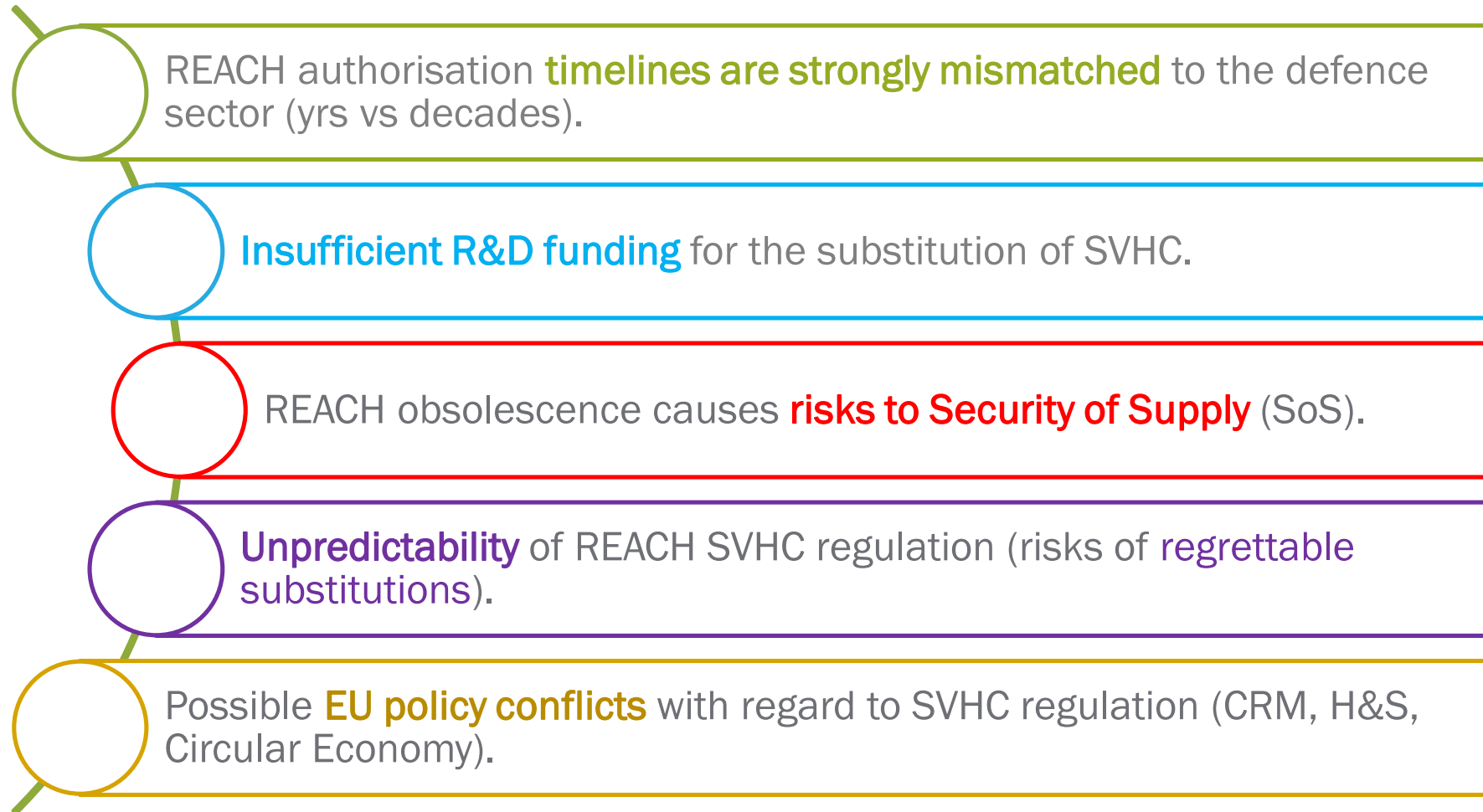
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Impact of REACH on Defence

REACH authorisation **timelines are strongly mismatched** to the defence sector (yrs vs decades).



Impact of REACH on Defence



Areas/Substances impacted by REACH (2017 snapshot – indicative examples)

Substance / substance group	REACH/CLP status	Air-Naval-Land	Space	Electronics	Nuclear	Munitions	CRM	R&T ongoing*
Phthalates	Annex XIV: first sunset date passed 21.02.2015	+				+		YES
Lead chromate (CAS 7758-97-6)	Annex XIV: sunset date passed 21.05.2015	+				+		YES
Trichloroethylene (CAS 79-01-6)	Annex XIV: sunset date passed 21.04.2016	+				+		YES
Cr(VI) compounds	Annex XIV: first sunset date on 21.09.2017	+	+	+		+	Chromium	YES (high)
Cobalt salts	Annex XIV recommendation (2011) - on hold	+	+				Cobalt	Not known
ADCA (CAS 123-77-3)	Annex XIV recommendation (2014)					+		Not known
Refractory ceramic fibres	Annex XIV recommendation (2014)	+					Silicon metal	Not known
Boric Acid (CAS 10043-35-3)	Annex XIV recommendation (2015)	+	+		+		Borates	YES (some)
Lead and its compounds	Annex XIV recommendation (2016) - partly	+	+	+		+		YES
Hydrazine (CAS 302-01-2)	Candidate list (20.06.2011)	+	+		+	+		NO (F-16)
Lead titanium zirconium oxide (CAS 12626-81-2)	Candidate list (19.12.2012)	+		+	+			YES
Cadmium (CAS 7440-43-9)	Candidate list (20.06.2013)	+	+	+	+	+		YES (some)
Ammonium perchlorate (CAS 7790-98-9)	RMOA (after substance evaluation)		+			+		YES
Beryllium (CAS 7440-41-7)	RMOA	+	+	+	+	+	Beryllium	Not known
Bisphenol A (CAS 80-05-7)	SVHC proposal and intention; restriction	+						Not known
Diisocyanates	RMOA concluded: Annex XVII proposal	+	+	+	+	+		Not known
Gallium Arsenide (CAS 1303-00-0)	CLP Annex VI			+			Gallium	YES
Nickel salts	RMOA	+	+	+		+		YES (some)
Petroleum substances, e.g. in NATO fuel	SVHC Roadmap to 2020 / PetCo Group	+						YES (some)

Legend:

Annex XIV	ECHA recommendation	Candidate List	(Potential) SVHC	*Information on R&T based on MoD and defence industry survey
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Ammunition Classification under REACH

EDA Member States' Common Position on Ammunition Classification under REACH

adopted Sep 2017

- ❖ **Reducing the risk of misinterpretation** of, and **enhancing compliance** to, the REACH provisions on substances/mixtures or articles;
- ❖ **Supporting the European Defence Technological and Industrial Base** (EDTIB) in its efforts to **raise awareness** on issues pertaining to ammunition classification under REACH.

available at: <https://www.eda.europa.eu/docs/default-source/brochures/eda-member-states-common-position-on-ammunition-classification-under-reach--adopted.pdf>



EDA MEMBER STATES
COMMON POSITION ON AMMUNITION
CLASSIFICATION UNDER REACH

25 September 2017

Alignment of Procurement Contract Terms with REACH

EDA Recommendations to Member States for Facilitating Alignment of national Procurement Contracts with REACH

adopted Feb 2019

- ❖ **Reducing the risk of misalignment** between MS' REACH-related contractual requirements and REACH Regulation provisions;
- ❖ Reflect **common minimum points for harmonisation**, for which an agreement was reached during the examination of the issue by EDA, with support from MS.
- ❖ Supported by defence industry and disseminated to relevant stakeholders.

Previously circulated by EDA to ASD, NDIAs and ESA/MPTB members

Alignment of Member States' Procurement Contracts with REACH

Attachment: EDA Recommendations to Member States for Facilitating Alignment of National Procurement Contracts with REACH

Issue/Background

The EDA REACH Study¹, finalised in December 2016, reflected, among others, that EU defence industry has expressed concerns regarding the wording of some contractual clauses in Member States' defence procurement contracts stemming from REACH requirements. Such clauses sometimes deviate/are not aligned with the REACH terminology² and the provisions regarding the communication of information in the supply chain.³

This misalignment between Member States' REACH-related contractual requirements and REACH Regulation provisions, results in uncertainties and lack of clarity for defence industry/contractors, which in turn may create unnecessary risks to contract implementation, both for industry/contractors and Member States which awarded the contract(s). In addition, there may be potential strong implications on already established internal industrial processes, potentially affecting industries throughout the multi-tier supply chains, from the main contractor through to the suppliers of small components, which may cause significant costs.

Against this backdrop, the study recommended (under proposal No. 9.5.3) the implementation, by EDA/MoDs with the support of defence industry, of a follow-up activity aiming to standardise Member States' defence procurement contract terms/clauses around appropriate EU MoD and industrial (supply chain) best practices and return of experience, to best align such terms/clauses with the provisions of REACH.

¹ EDA Study on the Impact of REACH and CLP Chemical Regulations in the Defence Sector, available via <https://www.eda.europa.eu/docs/default-source/documents/eda-reach-study-final-report-2016-decembet-16-p.pdf>

² Mainly REACH Article 3(1)-(3) defining "substance", "mixture" and "article", as follows:

(1) **substance**: means a chemical element and its compounds in the natural state or obtained by any manufacturing process, including any additive necessary to preserve its stability and any impurity deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition;

(2) **mixture**: means a mixture or solution composed of two or more substances;

(3) **article**: means an object which during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition;

³ Mainly REACH Articles 31 (Requirements for safety data sheets), 32 (Duty to communicate information down the supply chain for substances on their own or in mixtures for which a safety data sheet is not required), and 33 (Duty to communicate information on substances in articles). For example, requirements may refer to "hazardous materials", "goods" or "products" when requiring the delivery of safety data sheets (which are only required under REACH Article 31 for hazardous "substances" and "mixtures" in the sense of REACH, but not for "articles" which are subject to REACH Article 33 in relation to candidate list substances).



EDA RESEARCH & TECHNOLOGY ACTIVITIES/REACH

EDA RESEARCH & TECHNOLOGY ACTIVITIES

- ▶ EDA promotes, facilitates and manages Research and Technology activities in 12 technology domains (CapTechs) and 2 Working Groups, in order to **develop knowledge and technologies needed for future defence capabilities.**

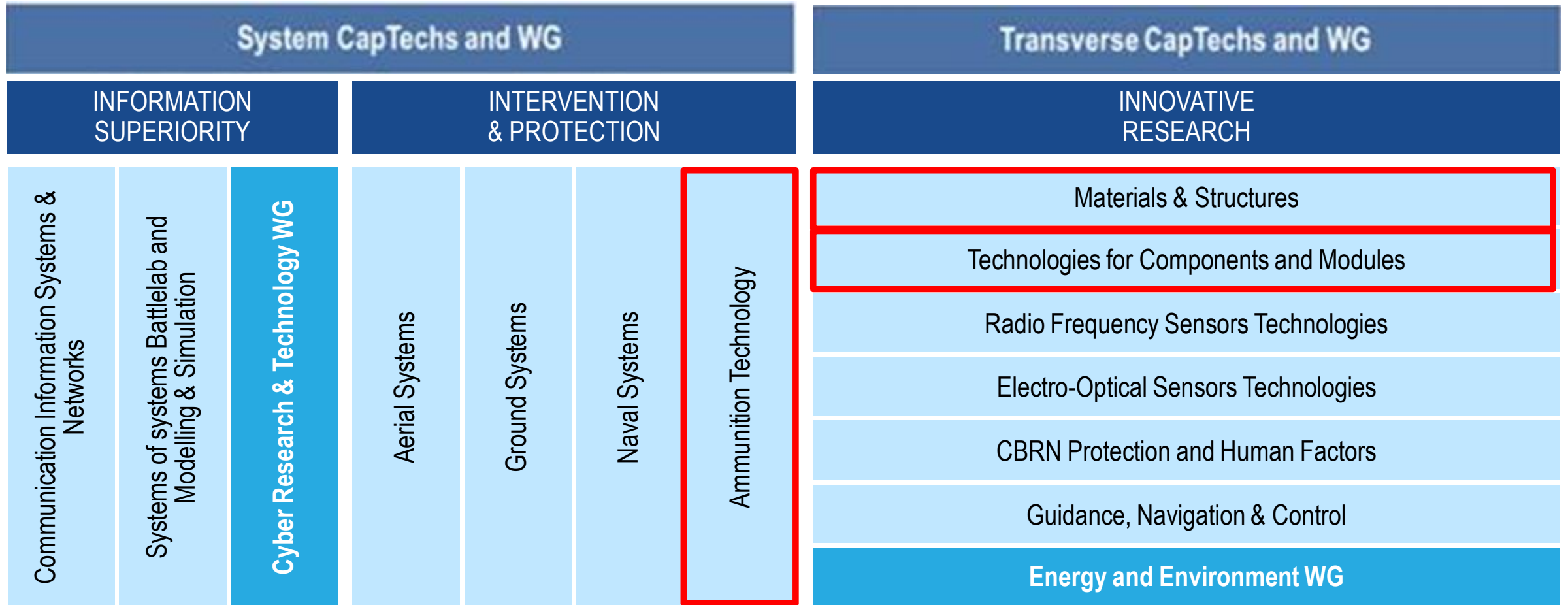
R&T CONTRACTING TOOLS:

- ▶ EDA studies from EDA operational budget (OB)
- ▶ Cat B projects funded by Member States, Bottom up initiatives (Opt In)
- ▶ Cat A programmes funded by Member States, Top down steering (Opt Out)
- ▶ Adapted mechanisms

R&T MANAGEMENT TOOLS:

- ▶ Identification of technologies - **Technology Watch and Foresight**
- ▶ Technology assessment and prioritisation:
 - **Strategic Research Agendas (SRA)**
 - **Overarching Strategic Research Agenda (OSRA)**

CAPTECHS AND WG – TECHNOLOGY DOMAINS & NETWORKS



The detailed technical coverage of each group is posted on www.eda.europa.eu

COLLABORATIVE R&T ON SUBSTITUTION OF REACH SVHC

- **12 Dec 2018 R&T Steering Board/REACH**: Raising awareness on the importance of innovative R&T activities to address current and potential future direct or indirect implications of the REACH Regulation on EU MoDs / Armed Forces.
- **EDA Steering Board decisions**

- Acknowledged the potential **direct or indirect implications of REACH to the EU Ministries of Defence/Armed Forces** due to the **risk of obsolescence of REACH-regulated substances** that are critical for the sustainment or development of defence capabilities;*
- Encouraged participating Member States to **consider priority actions** as regards innovative R&T activities aiming at substitution of REACH-regulated substances;*
- Tasked the Agency to pursue, in cooperation with participating Member States, the implementation of **collaborative innovative R&T activities** to mitigate, and if possible minimise the impact of REACH in the defence sector.*

COLLABORATIVE R&T ON SUBSTITUTION OF REACH SVHC

- **CapTech Technologies, Components & Modules:**

- Incorporation of REACH dimension in Strategic Research Agenda (SRA), in progress;
- Each CapTech Technology Building Block (TBB) is under review for possible REACH impact.

- **CapTech Materials & Structures:**

- REACH dimension incorporated in recently updated Strategic Research Agenda (SRA);
- *Work on REACH-Compliant Materials”* in progress.
- Previous projects: corrosion protection coatings in aeronautical (*ECOCOAT*) and naval (*CCNS*) systems, in order to work towards substitution of SVHCs such as hexavalent chromium and cadmium;

REACH AND MATERIALS CAPTECH

- A position paper endorsed by the CapTech and Member States **“On the impact of the entanglement of REACH Regulation, Critical Raw Materials and Circular Economy on European Defence”**
 - (1st Element) **REACH** - EDA study on the impact to the defence sector
 - (2nd Element) **Critical Raw Materials (CRMs)** - European dependence CRMs from third Countries
 - ❖ Impact on the strategic development of new materials
 - ❖ Impact on the present European **supply chain landscape**
 - (3rd Element) **Circular Economy** - Forward-looking approach in the substitution strategy
 - ❖ Circular Economy Strategy
 - ❖ Circular materials and processes (advanced design/architecture)



REACH AND MATERIALS CAPTECH - IMPACT ON DEFENCE APPLICATIONS

- Main Technology Building Block (TBB) affected: **surface treatment for maximum lifetime and/or hostile environments**
- Coatings as vital factor for all types of platform and system deployed in operations exposed to hostile environment
- Taking into account REACH considerations
- **Surface treatments REACH-impacted substances**
 - ✓ **Hexavalent Chromium compounds** in surface treatment of many defence products
 - ✓ **Cadmium** plating in the aerospace & defence sector (fasteners, connector housings, etc.)
 - ✓ **Boric acid**, critical use in electrolytic deposition of metals, e.g. Ni, SnPb, Co, Cd. And for metal working fluids and brazing fluxes.



OTHER IMPACTS ON DEFENCE APPLICATIONS

➤ **Soldering**

- ✓ Lead-free -> brittleness, whiskering

➤ **Thermal and fire insulation materials**

- ✓ Refractory ceramic fibres, in black-boxes and engine fire shields. No optimal alternatives found hitherto

➤ **Alloys**

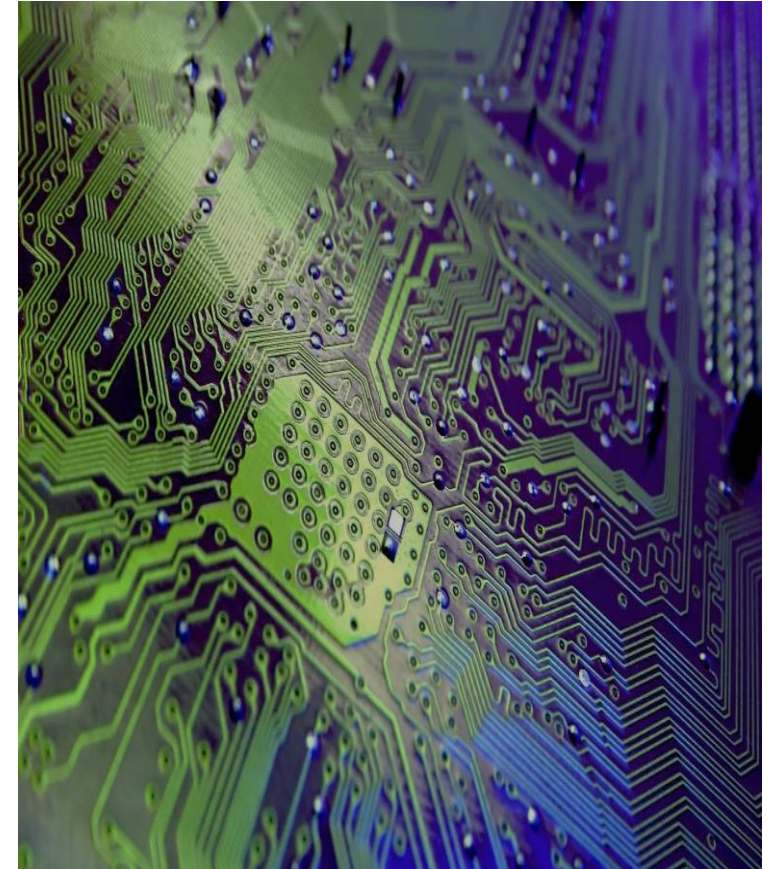
- ✓ Lead-free alloys limited, difficult to apply to critical aircraft structure

➤ **Boron oxide**

- ✓ Reagent in GaAs manufacturing
- ✓ Gunn diodes

➤ **Cobalt**

- ✓ Ni-based corrosion protection



CAPTECH AMMUNITION TECHNOLOGIES – REACH

**TBB: High
Performance, low
sensitivity and
REACH Compliant
Energetic Materials**

Chemical quantum calculations, thermochemical and detonation codes

Simulation of EM reaction level under thermal and/or chemical stresses

New chemical (energetic and non-energetic) materials

Innovative techniques for accurate and efficient characterization of environmental impact of EM used in missiles and munitions

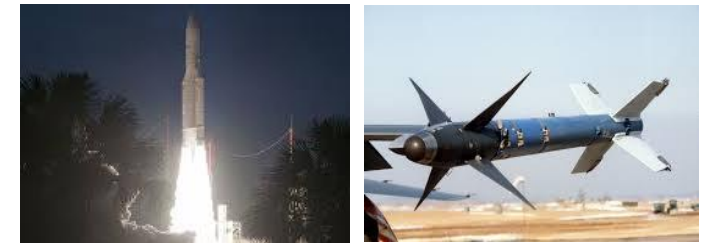
Prioritization and replacement of toxic or other environmentally harmful EM to be developed, including those related to potential future REACH-compliance requirements

Implementation of a European common data base related to EM

PROJECT: ENERGETIC MATERIALS TOWARDS AN ENHANCED EUROPEAN CAPABILITY [EMTEEC]



- **Aim:** Maintain and enhance European capability to produce Energetic Materials for Engage Capability
- **Member States:** SE, CZ, DE, NL, FR + NO
- **Aim:** develop mutual awareness and knowledge of selected future EM, production methods for critical components, including raw material and small scale evaluation methods.
- **Timeframe:** 2016 – 2020
- **Status:** In progress
- **REACH relevance:**
 - Identification of critical or restricted components (e.g. ITAR, EAR, REACH), such as burn rate modifiers, HTPB, bonding agents, plasticizers and solvents
 - Secure the production methods of the European manufacturers, complying with current international regulation (REACH)





REACH R&T&D FUNDING

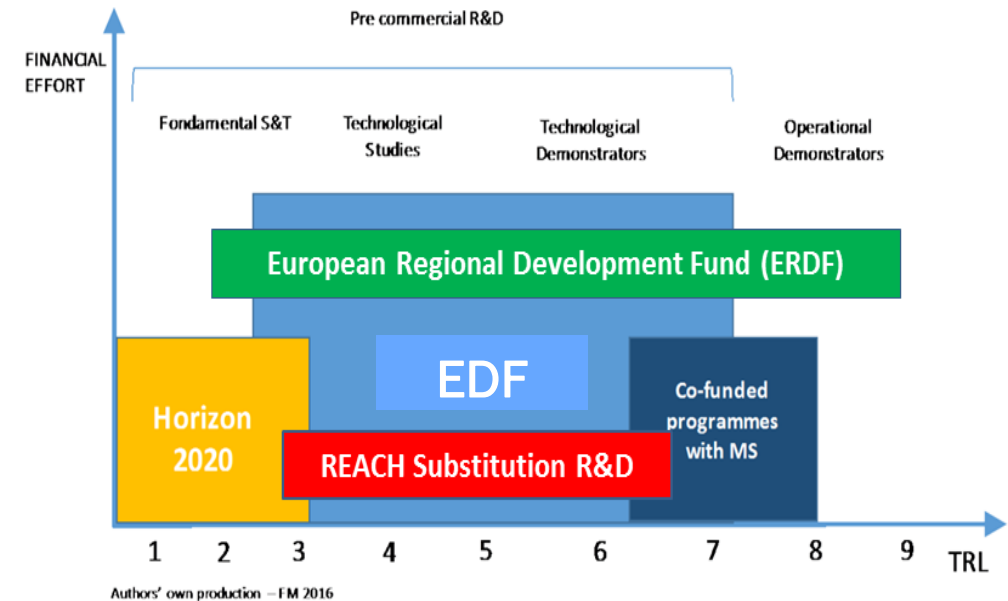
R&T&D FUNDING SCHEMES FOR INNOVATIVE SUBSTITUTION

- **Aim:** Best exploitation of potential EU-level R&D funding schemes / sources for funding of R&T projects for innovative substitution of REACH related Substances of Very High Concern (SVHCs) impacting defence, in the near future

- Horizon 2020 (potential funding for dual use projects)
- European Structural and Investment Funds (ESIF)/European Regional Development Fund (ERDF)
- LIFE Programme

- **European Defence Fund (EDF)** https://ec.europa.eu/growth/sectors/defence/european-defence-fund_en

- **Preparatory Action on Defence Research (PADR) (2017-2019, €90m)** <https://www.eda.europa.eu/what-we-do/activities/activities-search/pilot-project-and-preparatory-action-for-defence-research>
- **European Defence Industrial Development Program (EDIDP) (2019-2020, €500m)**
- **EDF under the 2021-2027 multiannual financial framework (MMF) (2021-2027, €13b)**



EDA ACTIVITIES ON ACCESS TO EU FUNDING

- An integrated/coordinated/prioritised work

EDA ROLE under MS prioritisation :

inform **EU funded activities** by linking CDP-OSRA-KSA

«IdentiFunding» (digital) toolbox for defence priorities:

OSRA-TBB.
KSA, Industry,
RPAS ATI,
Environmental management, Energy,
REACH,
Circular Economy, ...



EDA ENGAGEMENT with INDUSTRY:

1. interface with EU policies:
 - sharing information on **EU funding policies**,
 - collecting information on their impact;
2. support **access to EU funding**

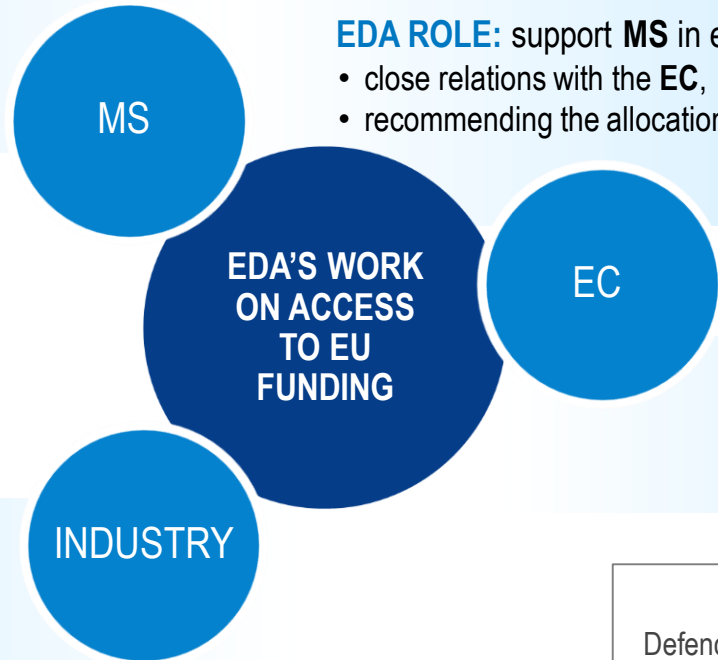
European Funding Gateway

→ EDA's "COSME" & "ESIF" & "Erasmus+" platforms

European Funding Gateway (eda.europa.eu/eufunding)



European Funding Gateway
(eda.europa.eu/eufunding)



EDA ROLE: support MS in exploiting wider EU policies:

- close relations with the EC,
- recommending the allocation of funding to projects and programmes

EDA ROLE: act as an interface by providing defence views to the EC on EU funding programmes

INDUSTRY geo-localisation for Defence in EU R&I Smart Specialisation Strategy



EDA / DEFENCE & ESA / SPACE SYNERGIES ON REACH

EDA – ESA INTERACTION ON REACH

- EDA/ESA REACH close interaction has been now established - initiated **early 2018**
 - ESA granted to EDA membership in MPTB, as **observer**
 - EDA invites regularly ESA to EDA REACH Plenary meetings, as **observer**
- **Next EDA REACH Meeting – Session with Industry 26 June 2019, 09:00 - 13.30, Brussels, BE**

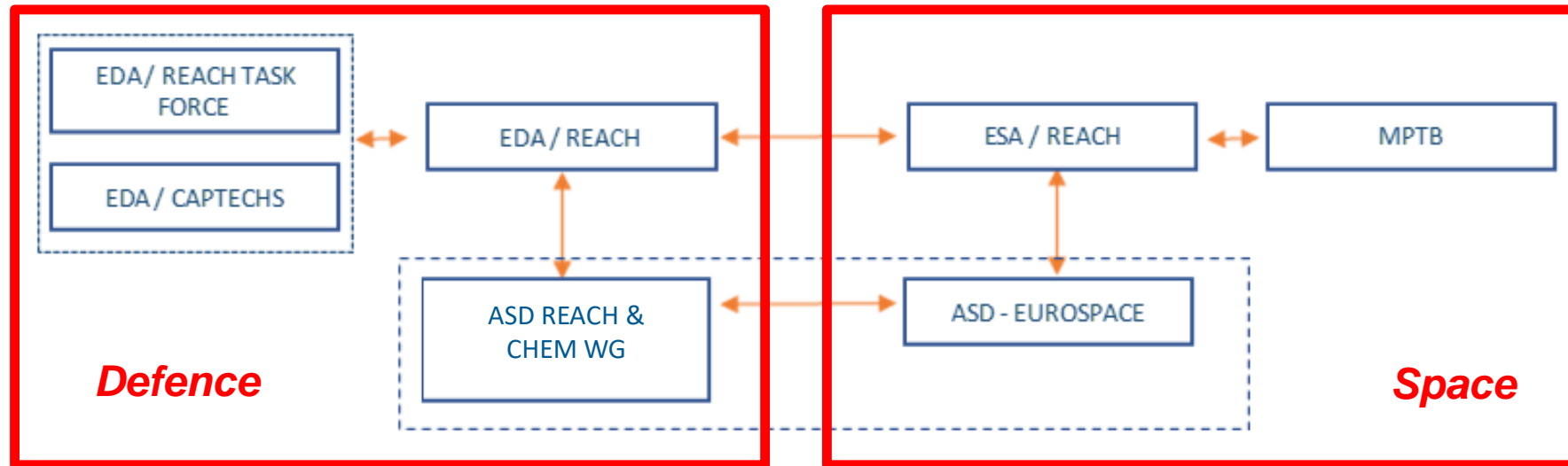


DEFENCE/SPACE vs REACH

- Many of challenges that defence sector faces on REACH **are very relevant (in some cases identical)** to the ones that the space sector is encountering. **Both sectors are:**
 - **niche players** that use **low quantities** (materials, components, etc.) - **share components** (e.g. electronics and propellants)
 - supported through **complex cross-border multi-tier industrial supply chains**
- Several topics of common interest, for which **further exchange of information/common action would be mutually beneficial** e.g.
 - Specific important substances regulated/impacted by REACH critical for defence/space - **Example: Chromium Trioxide**
 - **R&T for innovative substitution** of such substances
 - REACH Art. 33 implementation incl. **updated Waste Directive/ECHA Database**

DEFENCE/SPACE vs REACH

- In-depth expertise/technical groups from both sides
- Defence/Space Industry at EU level : Common denominator ASD and its activities/forums on REACH (ASD REACH Implementation WG) and Space (ASD-Eurospace)
- Supporting set-up:





CONCLUSIONS – WAY AHEAD

CONCLUSIONS

- REACH and its processes, as they stand now, **may impact the actual operability of Member States' Armed Forces**, especially considering the long lifecycles of military equipment
- EDA implements **a wide REACH portfolio of activities (EDA REACH Roadmap 2018-2020)**, aiming to support Member States' (MoD) and defence industry in mitigating / minimizing such impact, at **Policy and Technical/R&T level**
 - Supported by specific expert groups [**EDA REACH Task Force** (gov.), **EDA CapTechs** (gov., ind.)]
 - **Enhanced R&T activities on innovative substitution of specific critical substance, are crucial**
- Raising awareness of EU level REACH stakeholders (**Commission (mainly DG GROW), ECHA**) – **very good cooperation** which needs to be maintained and enhanced
- Closely interacting with **defence industry** (ASD, NDIAs)
- Liaising with **sectorial stakeholders/communities** (e.g. ESA/space)

EDA/DEFENCE - ESA/SPACE WAY AHEAD

- EDA and ESA to **continue to closely liaise at technical level** on REACH areas/topics of common interest
- Keep each other regularly informed on developments for REACH activities, with a view of **cross-fertilisation of work as well as exploiting potential synergies**, including on R&T substitution for the benefit of defence and space stakeholders



By joining forces, EDA/defence and ESA/space can have a **stronger common voice** and make themselves heard towards other EU REACH stakeholders, **in view of minimizing the potential future impact of REACH for both Defence and Space**

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11 June 2019, ESA ESTEC, NL



Thank you very much
for your attention...
Any questions??

