Critical Space Technologies for European non-dependence

Space WP 2023 and 2024

Fabio VITOBELLO
fabio.vitobello@ec.europa.eu
European Commission, DG-DEFIS - Defence Industry and Space, B2

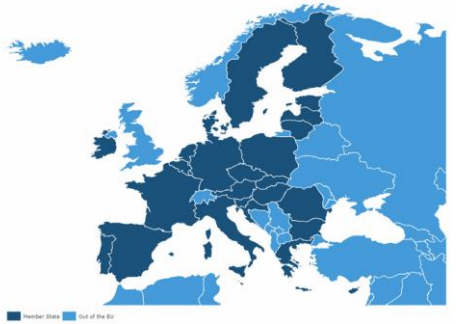
More effort in the area of non-dependence

- Recent geopolitical developments have highlighted the **urgency of increasing the effort on technological dependencies**
- The Commission is taking several steps to enhance EU resilience and EU strategic technological sovereignty
- As per the WP 2023, the **budget allocated** to the area of critical space technologies for European non-dependence **has been doubled, reaching € 20 million per year** until the end of HE
- Taken action to include new technologies dependencies under the light of recent crises

Need to ensure a long term robust supply chains

- In order to achieve the expected outcomes, and **safeguard the Union's strategic assets, interests, autonomy, and security** in the area of research covered by this topic, it is important to **avoid a situation of technological dependency on a non-EU source**
- This WP topic has a higher level of requirements in terms of eligibility conditions, guarantees of unrestricted access to technology to EU end users after the end of the project, supply chains free of non-EU export restrictions and lack of foreign non-EU control for international companies
- Implementing a Council request, COM is currently prepare the deployment of the OCT (Observatory of Critical Technologies) for mapping and monitoring gaps, dependencies and weak element of all critical technologies supply chains

Non-dependence objective (part 1)



- **Eligibility**
  - participation is **limited** to **legal entities established in Member States, Iceland and Norway**
- **Legal obligation**
  - **For a period of up to 4 years after the end of the project**, **access rights to the use of products and/or processes generated by the project** shall be given to European entities, in compliance with the signed Grant Agreement and with no legal restrictions and limitations stemming from International Traffic in Arms Regulations (ITAR), EAR99 or equivalent instruments applicable in other jurisdictions.

Non-dependence objective (part 2)

- To achieve this objective, already in the proposal, applicants must
  - Describe the technologies and/or technology processes to be used and show that they are **free of any non-EU legal export restrictions or limitations**, such as those established in the International Traffic in Arms Regulations (ITAR), Export Administration regulation (EAR) such as EAR99 or equivalent instruments applicable in other jurisdictions;
  - Set up a suitable technology development process aiming at avoiding export restrictions of non-EU states and assess vulnerabilities of the supply chain.
- As per WP 2023, companies that have a multinational nature will be requested to provide **guarantee of absence of foreign control** therefore:
  - measures to avoid issues concerning control, access to sensitive information and results, including IPRs
  - Companies will be screened as part of the OCA procedure

EU Space WP 2023 and 2024 and relevance for HEARTS

- The Space WP 2023 Call is currently open, deadline for submission 28/03/23

2023:

1. **High speed DAC-ADC for high frequency operations**
2. Space qualified carbon fibre pre-impregnated material sources
3. **Enhanced performance and space qualified detectors – IR range (SWIR range)**
4. Mid-power range electric propulsion thruster technology: Qualification of electrical propulsion thrusters and PPUs for power ranges up to 5kW
5. Mid-power range electric propulsion thruster technology: Development of new generation of thrusters based on non-dependent propellants (i.e. not Xe or Kr)
6. Replacement solutions for metallic lead (Pb)
7. Multi - junction solar cells for space applications

2024:

1. Low shock Non-Explosive Actuators (NEA) for smallsats
2. High data rate (12.5 to 28 Gbps or higher 56 Gbps), low consumption, short range links
3. Power laser sources in the eye-safe region
4. **Enhanced performance and space qualified detectors – visible range**
5. **Ultra Deep Submicron technology for next generation space integrated circuits: ASICS, FPGA and microprocessors**
6. **Discrete power devices (200V normally-off GaN)**
7. Photonics components

Importance of HEARTS timely results

- The completion of the project HEARTS within the time duration of 4 years will be instrumental for enabling the testing of new EEE components supported by the EU Space programme
- Need of managing the HEARTS project in a effective way to exclude delays
- Exploit the possibility (in coordination with Commission) to build a link between HEARTS and new Commission Space EEE projects coming from the 2023-2024 call

Importance of the project HEARTS for the European Commission

- The project HEARTS and related establishment of a high energy (>100MeV/u) radiation facility in Europe for serving the need of advanced space electronics represents a strategic project
- It is requested the consortium specific attention to reference the Commission as the funder of this project and related development
  - Need to explicitly mention the European Commission and its Space R&I Programme in all public presentations exploiting the projects results
  - Prior to paper submission, request to include Commission (HADEA+DEFIS) in the revision loop

Thank you

Any Question?

You can find me at fabio.vitobello@ec.europa.eu

European Commission