

Annex: Success stories – EU-Japan cooperation in research and innovation

Substitution of critical metals: Reducing our reliance on critical raw materials

Two projects jointly funded by the EU and Japan through a coordinated call have looked into possible substitutes for various critical metals, which are short in supply. The projects ran from September 2013 to February 2017.

The **IRENA project** developed single-walled carbon nanotube (SWCNT) thin films to replace indium and gallium in electronic devices. It produced highly advanced transparent conductors that would not be achievable with the more commonly used indium tin oxide. Further work related to touch sensors, thin film transistors, and the use of SWCNT films in solar cells.

The **NOVACAM project** focused on possible substitutes for critical metals used in the conversion of biomass into chemicals and fuels. Activities centred on the development of catalytic processes to transform lignocellulosic biomass – plant dry matter such as straw and husks – into renewable industrial feedstocks. It also devised novel methods for the conversion of cellulose and glucose into chemicals that can subsequently be transformed in a variety of substances or materials.

ICT: Cloud of Things for empowering the citizen cloud in smart cities

As a part of the EU-Japan coordinated call in ICT in 2013, the **ClouT project** aimed to establish a smart city platform that benefits from the latest advances in IoT and Cloud Computing domains. It has developed several smart city applications, and deployed them in 4 pilot cities of the project. Applications such as environmental monitoring, context aware shopping coupons, city dashboards, citizen safety applications, and elderly care social networks have been validated via field trials involving citizens of the pilot cities. ClouT project received one of the Horizon 2020 12 “Stars of Europe” awards in 2016.

Aviation:

1. Smarter flight control system

VISION project is aimed at developing an automatic landing system and a trouble detection system using image processing and intelligent control for safer flights. In this year, the project team achieved to produce prototype systems.

2. Lighter heat system

SHEFAE project aims to make an efficient, light and compact integrated heat exchange system for saving energy. In this year, the project team achieved to produce a lighter oil cooler system.

3. Efficient composite

EFFICOMP project aims to make more efficient light-weight composite manufacturing and an ignitable spark detection system. In this year, the project team achieved to decide a method for spark detection and a spec for detection equipment.

4. Future Cabin

FUCAM project contributes to the advancement of safety, perceived quality, comfort, connectivity and in-flight experience through cabin architecture, design and systems development - so as to eventually develop the best cabin products. The collaboration is leveraging resources, mitigating risks and establishing a long-term relationship between Europe and Japan.