Product Assurance and Safety

European Component Initiative

Global trends in the Electrical, Electronic and Electromechanical (EEE) components industry over the past decade have resulted in the growing dependence of the European space user community on non-European components that are subject to export controls.

Coordinated through ESA, the European Component Initiative (ECI) promotes the unrestricted availability of space-qualified components. Launched in 2004, it also involves national contributions from CNES (F) and DLR (D). It provides new European manufacturing capabilities for a wide range of space-qualified components,

ranging from passive components to microprocessors. The first new components have already reached the market, with commercial orders being received in the autumn for fuses and double-balanced hybrid mixers. The ECI has also promoted the introduction of new space-component suppliers, including Small and Medium-size Enterprises (SMEs) with exposure to other specialist areas, such as the military, medical and offshore domains. The European Space Component Coordination (ESCC) continued to provide the ideal forum for the European space community to establish the list of candidate components for the second phase of the ECI. The Initiative also paved the way for strategy papers related to the deep-submicron and gallium-nitride technologies presented to the Agency's Industrial Policy Committee (IPC) during the year, with the first activities to be kicked-off during 2007. Cooperation with the Japan Aerospace Exploration Agency (JAXA) was widened in the area of space components, with JAXA being granted observer status in the ESCC. This cooperation will be further strengthened through an ESA/JAXA Agency-level agreement in the field of

space components to be ratified in 2007.

EEE Components

The negative trend of an ever-diminishing number of suppliers on the ESCC Qualified Parts List has been halted, and the strong increase in evaluation and qualification activities under the Annual Qualification Plan (AQP), driven by ECI and ESA and national space agency technology programmes, will lead to an expansion of the European Preferred Parts List (EPPL) and Qualified Parts List (QPL) in 2007. A European Qualified Manufacturer List based on technology flow qualification has now been established. Significant progress was also made in the updating of ESCC specifications and component-related ECSS standards. The ESCC website and ESCIES (https://escies.org) remain the key communication tools for disseminating EEE component information to projects, manufacturers and users.

European Cooperation for Space

Standardization (ECSS)

The ESA standardisation activities are a key element in executing Agency programmes effectively and improving the worldwide competitiveness of European industry. Two dedicated task forces were set up by the Steering Board to prepare for the next phase of ECSS, which should focus on the maintenance of ECSS standards based on feedback from the user community. The Steering Board also revitalised the ECSS definitions for standards, handbooks and technical memoranda, instigating an overhaul of the existing ECSS documents. The routine work continued in parallel, leading in 2006 to a self-standing set of close to 115 documents covering European standards in the management, engineering and product-assurance disciplines for space-related activities. The level of maturity and completeness of the ECSS standards is such that all participants, and in

particular European industry, are now requesting their systematic introduction into contractual space procurement documentation. In addition, several other space agencies, in the Ukraine, Russia, Japan, China, Brazil and Australia, have either decided to use or have expressed interest in using the ECSS documents. At ECSS and ESA level, cooperation with other standards organisations continues to be pursued, ensuring consistent and closely aligned policies for space-related matters. In particular, ESA participation in 2006 in the

Consultative Committee for Space Data Systems (CCSDS) facilitated the publication of a total of eight 'Blue Books'. The global and political implications of these standards for planetary protection and debris led to a decision to support their development as ISO standards.

Japan

The Agency continued to hold regular meetings with Japan. In addition to their traditional cooperation in the framework of the ISS, ESA and the Japan Aerospace Exploration Agency (JAXA) cooperate actively in the fields of mission operations and product assurance and safety. At the beginning of the year, ESA and JAXA established a new cooperation in the space-components domain. In the field of Earth observation, after the successful launch on 24 January of ALOS (Advanced Land Observing Satellite), Japan's latest Earth-observation satellite, ESA and JAXA were able to implement their Memorandum of Understanding (MoU) on the ALOS Data Node. ESA is supporting ALOS as a 'Third Party Mission', which means that the Agency will use its multi-mission ground systems, involving existing national and industrial facilities and expertise, to acquire, process and distribute data from the satellite. ESA is hosting the ALOS European Data Node (ADEN), delivering both near-real-time and offline data to scientific and operational users across Europe, and also Africa. In the field of space science, ESA and JAXA pursued

their strong cooperation on various missions. In July, they signed an MoU on cooperation on Solar-B. It enables JAXA to use the Svalbard Ground station in Norway, while ESA gets immediate access free-ofcharge to all scientific data from the mission. After the successful launch of Astro-F on 22 February, ESA and JAXA were able to implement their cooperation on the 18-month mission, which delivered its first images in April. ESA and JAXA have also finalised the text of an MoU regarding cooperation on the ESA BepiColombo mission to Mercury, for which JAXA will provide the Magnetospheric Orbiter (MMO). In the framework of the existing Staff Exchange Programme, ESA and JAXA pursued the exchange of astronaut training instructors for three-month periods.

China

ESA/China cooperation in the field of Earth-observation application development continued during the year. The third Dragon Symposium, held at Lijiang in Yunnan province in July, attracted more than 170 participants from China, Europe and beyond. The programme is advancing satisfactorily. Cooperation with China on Galileo is based on the Agreement between the National Remote Sensing Centre of China and the Galileo Joint Undertaking. Chinese industry is well advanced in the development work related to the Chinese contributions to the In- Orbit Validation (IOV) Phase. In the area of space science, ESA and the China National Space Administration held their third annual meeting, at which the two sides presented their respective programme plans and addressed possible opportunities for cooperation.