

COUNTERPLAN TEXT

Text: The European Union shall [plan mandates] through the European Space Agency (ESA).

SOLVENCY – EUROPE IS GOOD AT SPACE

MANY SUCCESSES PROVE THE EUROPEAN SPACE AGENCY (ESA) IS GOOD AT SPACE EXPLORATION & DEVELOPMENT

Jean Jacques Dordain, Director General, ESA, 8.31.2011

[<http://www.research-europe.com/index.php/2011/08/jean-jacques-dordain-director-general-of-the-european-space-agency/>]

In over 40 years of existence, the ESA has had its share of ‘firsts’ of which Europeans can be very proud: Ariane is leader on the global commercial launcher market; the ESA’s Envisat satellite is second to none at delivering environment-related data; the ESA safely landed its Huygens probe on Titan – the most distant landing ever achieved – to unveil the secrets of Saturn’s largest moon; we are orbiting Mars and Venus, chasing comets with its Rosetta mission, while water on Mars was first discovered by a European probe (Mars Express) only a few years ago. All these achievements are based on a highly competitive space industry and scientific community in Europe. European industry and operators are extremely successful on the global commercial market.

THE ESA HAS A BROAD BASE OF SPACE PROGRAMS

Jean Jacques Dordain, Director General, ESA, 8.31.2011

[<http://www.research-europe.com/index.php/2011/08/jean-jacques-dordain-director-general-of-the-european-space-agency/>]

The ESA is one of the few space agencies in the world to combine responsibility in nearly all areas of space activities: space science; human spaceflight; exploration; Earth observation; launchers; navigation; telecommunication; technology; and operations. The ESA’s programmes are designed to find out more about Earth and its immediate space environment; develop satellite-based infrastructure, technologies and services in the interests of European policies and citizens; and promote European industries. Space science, the backbone of the ESA’s activities, is a mandatory programme where each Member State contributes in a way which is proportional to its Gross National Product. All other programmes are optional and funded on their merit.

SOLVENCY – EUROPE IS GOOD AT SPACE

THE ESA HAS EXPERIENCE IN SPACE COOPERATION

Jean Jacques Dordain, Director General, ESA, 8.31.2011

[<http://www.research-europe.com/index.php/2011/08/jean-jacques-dordain-director-general-of-the-european-space-agency/>]

At the same time, the ESA is a remarkable example of international cooperation which goes beyond the boundaries of our continent: the International Space Station partnership, for instance, includes the ESA, Russia, Canada, Japan and the U.S. The International Space Station provides a platform where international crews of up to six astronauts conduct research into physical sciences and prepare for future human exploration missions. Europe's two key contributions to the ISS are the Columbus laboratory, permanently docked at the heart of the ISS, and the Automated Transfer Vehicle, launched on Europe's Ariane 5 launcher to re-supply the station on a regular basis and re-boost it so that it can maintain its orbital position some 250 km above our heads. I believe that new partners could join in the ISS: I am thinking of India, South Korea and China, who have already given proof of both their capacities and capabilities in space research. The 'giant leaps' in future space exploration will only be made through effective partnerships.

SOLVENCY – EUROPE IS GOOD AT SPACE

THE ESA IS CAPABLE OF MAJOR SPACE PROGRAMS

Horneck et al. 5.1.2010

[Gerda, Deputy director of the institute of aerospace medicine at the German Aerospace center, “Towards a European vision for space exploration: Recommendations of the Space Advisory Group of the European Commission, Space Policy”
<http://www.sciencedirect.com/science/article/pii/S0265964610000238#sec3>]

Europe's space industry, to a large extent encouraged by the programmes of the European space agencies, has developed its skills across a broad swath of space technologies and systems capabilities. This has not only resulted in a series of successful and increasingly complex scientific and infrastructure missions, but also in making European industry a formidable competitor on the world stage for commercial launch services, telecommunications and Earth mapping missions. The pace of technological and system development in industry currently makes Europe a credible partner for NASA and the rest of the world. In parallel Europe has created its own infrastructure for access to space and for the support of humans in space. Its Ariane launchers have been workhorses for the past three decades, now embodied in the Ariane-5, which is able to loft powerful telecommunications satellites, ground-breaking science missions and the Automated Transfer Vehicle (ATV). Europe's human spaceflight activities began in close association with the Space Shuttle programme (Spacelab) and have now reached maturity, as demonstrated by the Columbus module now in orbit as part of the ISS, as well as by other essential ISS supplies, e.g. Multi-Purpose Logistic Modules (MPLMs), Nodes and the ATV. These activities have excellent potential for preparing for a future human presence on Mars and the Moon. The technologies developed by the space industry for space habitats, such as air and water recycling, waste management, energy supply, telemedicine, and regenerative life support systems, have the potential for cross-fertilisation of innovative ideas between the space and non-space sectors. With the above developments, and Europe's growing expertise in autonomous atmospheric re-entry systems, Europe has all the basic building blocks to commit to even more ambitious endeavors. Future innovative missions will require new technology developments in Europe, such as precision landing, autonomous sampling (sample transfer, containment, drilling), methods for biosignature identification, radioisotope-based power systems, advanced propulsion, Earth re-entry capsules, in-orbit docking, telecommunication, in-situ energy generation and adequate sample reception and curation facilities on Earth. Starting an independent European self-launched human space programme is a controversial question and remains open to discussion. While in the short term Europe will continue relying on international collaboration, it should eventually be enabled to develop more autonomous transportation systems.

SOLVENCY – EUROPE IS GOOD AT SPACE

EUROPE CAN DO SPACE

Space Advisory Group, European Commission 10.10.10

[http://ec.europa.eu/enterprise/newsroom/cf/_getdocument.cfm?doc_id=6195
Space Exploration: A New European Flagship Programme p.8]

Over the last decades, Europe has demonstrated a capability to address space exploration challenges through a series of successful space missions. Some of these were designed from the outset as full European developments while, in other cases, they were developed in close cooperation with other non-European space agencies. As a consequence, Europe has gained key competencies, making Europe an essential partner in any global space exploration endeavour.

EUROPE'S SPACE INDUSTRY IS ADVANCED

Space Advisory Group, European Commission, 10.10.10

[http://ec.europa.eu/enterprise/newsroom/cf/_getdocument.cfm?doc_id=6195
Space Exploration: A New European Flagship Programme p.8]

Europe's space industry, supported by the programmes of the European space agencies, has developed its skills across a broad swathe of space technologies and systems capabilities. This has not only resulted in a series of successful and increasingly complex scientific and infrastructure missions, but has also made European industry a formidable competitor on the world stage for commercial launch services, telecommunications and Earth mapping missions. The pace of technological and system development in industry currently makes Europe a credible and even essential partner for NASA and the rest of the world.

SOLVENCY – CLIMATE SATELLITES

SOLVENCY FOR EARTH OBSERVATION

Jana Robinson, European Space Policy Institute, February 2011

[Enabling Europe's Key Foreign Policy Objectives Via Space, Report 30, p.6]

Space-based assets have already proven indispensable in providing essential environment-related data for scientific research and political decision-making. Earth observation (EO) satellites play a special role as evidenced by the existence of EO-related organisations and initiatives such as: the Committee on Earth Observation Satellites (established in 1984); the first Earth Observation Summit (EOS) in July 2003 and subsequent establishment of the Group on Earth Observation (GEO); as well as a 10-year plan to create comprehensive cooperation in Earth observation through the Global Earth Observation System of Systems (GEOSS) endorsed at the third EOS. Europe's GMES constitutes Europe's contribution to the GEOSS Plan. The GMES Climate Service provides a framework for sustained space-based climate monitoring. The European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) likewise plays an important role in climate monitoring. Other efforts include, for example, the European Space Agency's (ESA) Climate Change Initiative (CCI), which seeks to take advantage of data from ESA and MS EO space assets to analyse long-term global records of essential climate variables. Other environment-related initiatives, such as the REDD+ agreement, offer clear requirements and constitute a great potential for a beneficial use of space.

ESA LEADS IN ADVANCED CLIMATE CHANGE SATELLITES, THEY SHARE DATA, AND HAVE A LONG HISTORY OF COLLECTING DATA

ESA December 2, 2010

[http://www.esa.int/esaEO/SEM'TBJOWXGG_index_0.html]

Europe's important contribution to sustained global observations of climate, notably the Global Monitoring for Environment and Security programme, was highlighted by the speaker for the Belgian Presidency of the European Union. ESA is helping to realise the full potential of satellites for climate monitoring by offering free access to data from its fleet of current and future satellite missions. Over the next 10 years 20 new satellites will be developed, built and launched. These satellites will carry enhanced sensors for climate monitoring and ensure data continuity over long periods, which is essential for detecting trends. The recently launched Earth Explorer satellites that will provide new high-precision measurements of sea-ice thickness (CRYOSAT), Earth's gravity field (GOCE) and soil moisture and ocean salinity (SMOS). ESA's Climate Change Initiative is combining data from archives going back three decades to produce consistent global records for a wide range of essential climate variables such as greenhouse gases, sea ice extent and sea-surface temperature.

SOLVENCY – CLIMATE SATELLITES

EUROPE HAS LAUNCHED HIGH-RESOLUTION EARTH OBSERVATION SATELLITES

Elecnor, 4-Traders, November 7, 2011

[<http://www.4-traders.com/ELECNOR-SA-4011267/news/ELECNOR-SA-The-Deimos-1-satellite-captures-a-new-image-of-the-El-Hierro-volcanic-sea-stain-13880037/>]

The Deimos-1 satellite is the first European Earth observation satellite to be privately funded in its entirety. It was developed by Elecnor Deimos, the Elecnor technology division, to obtain high-resolution images of the Earth for subsequent processing and use in various applications, such as agriculture, the environment, defence, climate change, deforestation, the fight against natural disasters and water resources control.

ESA'S GMES PROGRAM SUPPORTS CLIMATE CHANGE AND ADAPTATION POLICIES

European Commission, 2011

[Towards a Space Strategy for the EU that Benefits Its Citizens, 2011, p.4]

The purpose of the GMES programme is to guarantee continuous access to information services on the environment and security issues which are based on permanent space-based observation and in-situ infrastructures. The GMES programme plays a vital role in monitoring the sea, land and atmospheric environment, aiming to facilitate better understanding of the European and global environments as a basis for policy. It will help underpin a sustainable use of resources as well as providing better information on climate change. It may thus be used to support policies on climate change adaptation and security, and to contribute to crisis prevention and management, with particular emphasis on humanitarian aid, development assistance and civil protection.

SOLVENCY – CLIMATE SATELLITES

GMES IS A POWERFUL TOOL

European Commission, 2011

[Towards a Space Strategy for the EU that Benefits Its Citizens, 2011, p.5]

The GMES programme is a powerful tool at the Union's disposal in the fight against climate change. Space observation, along with observation from other sources, provides us with information to improve our understanding of how the climate is evolving and enables us to draw up policy to adapt to that development.

THE ESA PROMOTES INTERNATIONAL SPACE COOPERATION

European Commission, 2011

[Towards a Space Strategy for the EU that Benefits Its Citizens, 2011, p.9-10]

International cooperation is vital when it comes to space. Increasingly, space endeavours are no longer a matter for individual nations alone and in many cases can only be efficiently achieved by pooling technological and financial capacities. International cooperation should also serve as a market opener for the promotion of European technology and services in the field and so help strengthen this strategic industrial sector. International cooperation in space should also support the promotion of European values through space-based projects focused on environmental protection, climate change, sustainable development and humanitarian action. The EU, in close collaboration with the ESA, will continue to maintain and strengthen its "space dialogues" with its strategic partners – i.e. the United States and Russia – with a view to increasing cooperation. These dialogues seek to identify areas where there is mutual benefit in cooperation; they cover a broad range of activities including Earth observation and Earth science, Global Navigation Satellite Systems, Space Science and space exploration. The EU will also propose that space dialogues, the scope and objectives of which will be set out in appropriate bilateral arrangements, be established with other existing and emerging space powers, in particular the People's Republic of China; the EU will seek constructive solutions to issues of cooperation and sharing open frequencies in the field of satellite navigation.

SOLVENCY – CLIMATE SATELLITES

GMES PROVIDES ACCURATE EARTH OBSERVATION DATA

European Commission on Enterprise and Industry May 13, 2011

[<http://ec.europa.eu/enterprise/policies/space/gmes/>]

Managing natural resources and biodiversity, observing the state of the oceans, monitoring the chemical composition of our atmosphere: all depend on accurate information delivered in time to make a difference. The European initiative for the Global Monitoring for Environment and Security (GMES) will provide data to help deal with a range of disparate issues including climate change and border surveillance. Land, sea and atmosphere - each will be observed through GMES, helping to make our lives safer.

OBSERVATIONS ARE KEY TO DETERMINING EFFECTIVE MITIGATION POLICIES

Kevin Trenberth, National Center for Atmospheric Research, October 2011

[Challenges of a Sustained Climate Observing System, October 2011, p. 3]

Moreover, because the climate is changing from human influences (IPCC 2007) it is an imperative to document what is happening, understand those changes and their causes, sort out the human contribution, and make projections and predictions on various time horizons into the future (Trenberth 2008). Mitigation of the human influences, such as by cutting greenhouse gas and aerosol emissions, is a major challenge and we must document the effectiveness of mitigation actions in order for them to continue. However, given the likelihood of future human-induced changes, learning and planning how to cope with the projected changes, and how well the predictions are verifying, become extremely important. Hence information related to adaptation to climate change is also vital. Process studies using special, perhaps short-term observations will help improve models and the information they can provide. In the future, possible prospects of geo-engineering to offset climate change mandate diligent observations to ensure that the intended effects are in fact happening and to check for unforeseen side effects. Together, all of these activities and needs determine the observations in a climate information system that feeds climate services to users of all kinds.

SOLVENCY – CLIMATE SATELLITES

THE SENTINEL SYSTEM WILL PROVIDE CRITICAL ESSENTIAL CLIMATE VARIABLES

Julian Wilson, Institute for Environment and Sustainability, 2010

[European Capacity for Monitoring and Assimilating Space Based Climate Change Observations – Status and Prospects, 2010 p. 23]

The Sentinels represent an important step in the development of research-to-operational capacity for delivering critical ECVs. They are the first non-meteorological operational series of dedicated Earth observation missions, of long duration, with guaranteed continuity and backup, providing long-term data streams that will be critical to the provision of ECVs to the climate community. Although the Sentinels will deliver data for understanding and monitoring other specific aspects of the earth system and for operational environmental services, their contribution to climate modelling, adaptation, mitigation and attribution will be unique.

SENTINELS WILL HAVE A LONG LIFETIME

Julian Wilson, Institute for Environment and Sustainability, 2010

[European Capacity for Monitoring and Assimilating Space Based Climate Change Observations – Status and Prospects, 2010 p. 23]

Each Sentinel mission is based on a constellation of two satellites in the same orbital plane, a configuration that fulfils GMES' revisit and coverage requirements and provides a robust and affordable operational service. Individual satellite lifetimes are specified as seven years, with consumables allowing mission extension up to 12 years. The life-cycle of the space segment is planned to be in the order of 15-20 years.

SOLVENCY – CLIMATE SATELLITES

SENTINELS WILL PROVIDE CRITICAL DATA

Julian Wilson, Institute for Environment and Sustainability, 2010

[European Capacity for Monitoring and Assimilating Space Based Climate Change Observations – Status and Prospects, 2010 p. 23]

All five Sentinels will provide data critical to the long-term measurement of ECVs (see Table 2 for a summary). Sentinel-1 will provide inputs to climate modelling through ECVs related to sea ice (extent, concentration, boundaries) and land ice (through glacier mass balance by interferometry), to ocean parameters such as wave characteristics and surface winds and to land cover characteristics, especially the extent and state of standing forests of particular importance to carbon accounting. Sentinel-2 will provide routine global imagery at high repeat cycles over a wide range of spectral channels, and will be of particular importance in assessing changes in land cover at the local to regional scale, including deforestation and changes in land use, and, coupled with Sentinel-3, assessing the physical state of terrestrial vegetation on regional to global scales.

SOLVENCY – CLIMATE SATELLITES

EUROPE HAS THE SCIENTIFIC CAPABILITY FOR CLIMATE MONITORING, THEY JUST NEED TO FUND IT

Julian Wilson, Institute for Environment and Sustainability, 2010

[European Capacity for Monitoring and Assimilating Space Based Climate Change Observations – Status and Prospects, 2010 p. 33]

Europe has many of the scientific and technical skills to provide full access to standardized data for climate studies. The need is to maintain these data records and provide access to them over the long- term, but the current reliance on research budgets and ad-hoc programmes for funding limit many activities to test cases and demonstrator projects. The lack of a stable financial platform, analogous to that underpinning NWP is a fundamental block to reliably generating products for operational users. Because funding is not provided from an operational budget line Europe is unable to make the move from research to operations. We are in the unacceptable position of having to de-scope planned activities, even where these are essential and based on proven world-class science. This underplays European scientific capacity, is a severe handicap to joint implementation and makes it impossible for a climate service to deliver sustained information, as required in any legal or operational setting.

EUROPE JUST NEEDS FUNDING TO PROVIDE GOOD CLIMATE MONITORING

Julian Wilson, Institute for Environment and Sustainability, 2010

[European Capacity for Monitoring and Assimilating Space Based Climate Change Observations – Status and Prospects, 2010 p. 4]

Translating capacity and potential into operational services can occur by securing a stable financial platform. Sustained funding would strengthen observational networks (the space segment making measurements, plus processing, product generation and quality control) enabling the consistent generation of Fundamental Climate Data Records (FCDRs), which are essential for the derivation of Essential Climate Variables (ECVs). It would support reanalysis and assimilation schemes needed to turn these data into policy relevant information. It would promote the design and construction of information management systems and promote effective use of climate information and prediction services in climate-sensitive policy sectors.

SOLVENCY – SPACE DEBRIS

THE ESA HAS EXTENSIVE EXPERIENCE IN ADDRESSING SPACE DEBRIS

ESA Space Debris Office August 4, 2009

[http://www.esa.int/esaMI/Space_Debris/SEMCIL05VQF_0.html]

Since the mid-1980s, ESA has been active in all relevant research, technology and operational aspects related to space debris. Agency expertise is mainly concentrated at the European Space Operations Centre (ESA/ESOC), Darmstadt, Germany, and the European Space Research & Technology Centre (ESA/ESTEC), Noordwijk, The Netherlands.

The team at ESOC have developed long-standing experience in the areas of:

Radar and optical measurements and their simulation

Development of space debris and meteoroid environment and risk assessment models

Analysis of debris mitigation measures and their effectiveness for long-term environmental stability

In-orbit collision risk assessments

Re-entry safety analyses

Space debris database issues

The team at ESTEC have a strong background in:

In-situ impact sensor technology

Vulnerability and impact damage analyses

Hypervelocity accelerator technologies

Hypervelocity impact shielding and protection

Since 2006, ESA has focused space debris responsibilities in ESOC's Space Debris Office, which is an independent team within the Ground Systems Engineering Department of ESA's Directorate of Operations & Infrastructure.

SOLVENCY – SPACE DEBRIS

THE ESA SPACE DEBRIS SYSTEM WILL BE MORE ADVANCED THAN THE U.S. SYSTEM

Tudor Vieru, science editor, Softpedia, April 2, 2011

[<http://news.softpedia.com/news/ESA-Wants-Space-Debris-Surveillance-System-192778.shtml>]

Officials at the European Space Agency (ESA) have announced their intentions to build their own space junk monitoring system, which they say could come in very handy during future spacecraft launches. At this point, the United States is one of the very few countries that have such a system in place. The US uses it to keep track of several thousand pieces of space debris, all larger than an inch. But the total number of debris is way larger. NASA and the US Air Force have been saying for years that they need help from the international community in this regard. Plus, the space junk was created by all countries with a space program. Monitoring spent rocket stages, satellite debris, shards of metal and paint, and other objects flying through low-Earth orbit is critically important towards guaranteeing the safety of outbound spacecraft on their way to orbit. For this reasons, ESA has decided to construct the most advanced monitoring system in the world, that will have the ability to track several thousand pieces of debris at the same time, Space reports.

ESA WILL BE ABLE TO TRACK DEBRIS

Tudor Vieru, science editor, Softpedia, April 2, 2011

[<http://news.softpedia.com/news/ESA-Wants-Space-Debris-Surveillance-System-192778.shtml>]

The new ESA system will allow for more awareness due to an improved radar it will contain, that will be able to track between 15,000 and 20,000 objects for up to 10 seconds daily. This will allow the space agency to be very well informed about how things are unfolding in orbit.

SOLVENCY – SPACE DEBRIS

EUROPE IS ACCELERATING THEIR SPACE AWARENESS PROGRAM, INCLUDING DEBRIS

Science Daily June 17, 2011

[<http://www.sciencedaily.com/releases/2011/06/110617124016.htm>]

In 2011, SSA activities are accelerating with the opening of a space surveillance data analysis capability located at ESAC, the European Space Astronomy Centre, Spain. It will serve as the test-bed for enhanced debris data analysis and for issuing test warnings to satellite operators. Similar test facilities are also being established for space weather and NEOs.

EUROPEAN DEBRIS PROGRAMS WILL INCREASE JOBS AND INTERNATIONAL COOPERATION

Science Daily, June 17, 2011

[<http://www.sciencedaily.com/releases/2011/06/110617124016.htm>]

In 2012, the initial phase of the SSA preparatory programme will reach fruition, producing a detailed technical roadmap for the future fully operational SSA system to be decided at the ESA Ministerial Council scheduled for the end of that year. "The plan will show how existing European research capabilities, such as the scanning radar at the Fraunhofer Institute near Bonn or ESA's own Optical Ground Station on the Spanish island of Tenerife, can be efficiently integrated into the system. It will also specify the new sensors that must be built in order to secure Europe's autonomy," says Bobrinsky. He adds that SSA is a major opportunity for European industry that will provide skilled jobs and targeted investment. "SSA will ultimately help secure in Europe a satisfactory level of autonomy in a strategic space domain and enable us to better cooperate with and assist all space-faring nations."

SOLVENCY – SPACE BASED SOLAR POWER

EUROPEAN COMPANY PLANS DEMONSTRATION SOLAR POWER SATELLITE

Lin Edwards, Physics Organization.Com January 21, 2011

[<http://www.physorg.com/news183278937.html>]

EADS Astrium, Europe's biggest space company, plans to put a solar power satellite in orbit to demonstrate the collection of solar power in space and its transmission via infrared laser to provide electricity on Earth. Chief executive officer of Astrium, François Auque, said the system is at the testing stage, but that a viable system collecting and transmitting power from space could be within reach soon.

EUROPEAN COMPANY IS LOOKING FOR ESA SUPPORT OF SOLAR POWER SATELLITE DEMO

Lin Edwards, Physics Organization.Com, January 21, 2011

[<http://www.physorg.com/news183278937.html>]

The concept of harvesting solar power in space has been discussed for at least the last three decades, but the problems of power loss during transmission and the expense and difficulty of assembling large arrays of solar collectors in space have seemed almost insurmountable. However, Astrium is not the only company close to bringing the idea to fruition. Last September Japan announced it is planning to put a small demonstration solar collecting satellite in orbit by 2015. This system will transmit the power to Earth using microwaves. EADS Astrium is seeking investors and partners such as the EU, national governments, space agencies, or power companies, to fund and contribute in other ways to the development of its operational orbital solar collection and transmission system.

EUROPEAN ECONOMY NET BENEFIT

SPACE SPENDING BOOSTS EUROPE'S ECONOMIC GROWTH AND JOBS

Jana Robinson, European Space Policy Institute, February 2011

[Enabling Europe's Key Foreign Policy Objectives Via Space, Report 30, p.10]

As the space sector in Europe is, in large part, user-driven, space technology provides an impetus for economic growth and job creation. The significant contribution that space science, technology, and derived applications and services can bring to policy-makers in Europe has already been recognised, including in an October 2010 European Commission Communication entitled “An Integrated Industrial Policy for the Globalisation Era Putting Competitiveness and Sustainability at Centre Stage”. In addition to space exploration and use and advancing the EU's strategic interests on the global scale, the Communication also cites the benefits to individual citizens, as well as economic competitiveness, where space is a “driver for innovation”. Space science produces asymmetrically large benefits for European society by driving research and development, education, public interest in science and technology, and innovative thinking. In short, space systems, and their derived applications and services, can advance a number of the key knowledge objectives.

SPACE TECHNOLOGY BOOSTS EUROPE'S ECONOMY

ESA 11 (European Space Agency, “Space technology down to Earth in Hannover”, 1 April 2011, http://www.esa.int/esaCP/SEMLE47UPLG_Benefits_0.html)

ESA will showcase space technologies transferred to innovative earthly applications at the Hannover Messe industry trade fair in April. The space apps will range from iPhone heart measurements and a 3D-video camera to anaesthetic containers. Visitors to ESA's ‘Space Apps’ booth will discover a wide range of novel solutions for use on Earth – all made possible thanks to technologies developed for European space programmes. Impressive products and technology spin-offs will illustrate the huge untapped potential of adapting advanced space technology for other businesses. “Europe's space programmes are an important driving force for the economy, not only when delivering the target services, such as telecommunications, navigation or remote sensing, or discovering new frontiers in space but also when the leading-edge technology is transferred to non-space systems and sectors,” explains Werner Dupont of MST Aerospace, the lead technology broker for ESA's Technology Transfer Programme and co-organiser of the Space Apps booth.

EUROPEAN ECONOMY NET BENEFIT

RISKS TO EUROPE'S ECONOMY ARE INTENSIFYING AND SENSITIVE

Bloomberg 9.6.11

[<http://www.bloomberg.com/news/2011-09-06/zoellick-says-world-in-dangerous-period-as-europe-turmoil-adds-to-risks.html>]

World Bank President Robert Zoellick indicated that risks to the global economy are intensifying, with the euro region's outlook dependent on European leaders making the right decisions. "We are moving into a dangerous period," Zoellick said in an interview with Bloomberg Television in Singapore today. While the U.S. is likely to avoid a return to recession, escaping with slow growth, the euro zone is facing a "particularly sensitive time," he said.

EUROPE COLLAPSE COULD TRIGGER A GLOBAL ECONOMIC CRISIS

David Case, Director, Global Post Research 9.6.11

[<http://www.globalpost.com/dispatch/news/regions/europe/110823/europe-trigger-global-crisis-economy-ioannides-sarkozy-merkel>]

Europe's woes continue to rile global investors. The Swiss National Bank surprised the markets by setting an exchange rate cap on the soaring franc, which investors have been flocking to as a safe-haven currency. European stock markets, meanwhile, hit their lowest point in two years Tuesday. While Europeans take their August vacations and leaders prevaricate, investors are growing increasingly concerned that the continent's common currency could collapse, and that one or more countries could default on their debt, leading to another global economic crisis.

EUROPEAN ECONOMY NET BENEFIT

SPACE IS THE KEY TO HIGH TECH COMPETITIVENESS FOR EUROPE

SPACE DAILY 11

(Staff Writers, A New Space Policy For Europe, April 7 2011,
http://www.spacedaily.com/reports/A_New_Space_Policy_For_Europe_999.html)

Vice-President Antonio Tajani, responsible for Industry and Entrepreneurship, said: "Space is strategic for Europe's independence, job creation and competitiveness. Space activities create high-skilled jobs, innovation, new commercial opportunities, and improve citizens' well-being and security. This is why we need to reinforce European space policy to best exploit its social and economic opportunities for industry and SMEs. In order to achieve our goals, Europe needs to keep an independent access to space." Faced with important economic, societal and strategic challenges, this communication sets out priorities for the future EU space policy.

SPACE SPINOFFS WILL INCREASE GROWTH AND JOBS FOR EUROPE

Space Advisory Group, European Commission 10.10.10

[http://ec.europa.eu/enterprise/newsroom/cf/_getdocument.cfm?doc_id=6195
Space Exploration: A New European Flagship Programme p.14]

Space has brought innovation, competitiveness and wealth back to Earth Technologies and products developed for space have been spun-out for terrestrial applications. Space systems, telecommunications, navigation, remote sensing, used separately or in combination, are the basis for applications in key strategic and high economic value sectors, e.g. security, transport, energy, environment, etc., and in daily life. The benefits of space are mainly outside the space sector, in all countries and at all levels, from the individual citizens to companies and institutions. Space Exploration will multiply the potential of space as a source for innovation and competitiveness in terrestrial sectors and will enhance the potential of space to create wealth and thus contribute to attaining the Europe 2020 objectives. Space Exploration is one of the most technologically challenging undertaking humans can engage in and it requires innovative solutions to overcome these challenges. This innovation can be used to address societal challenges such as intelligent energy, resources, waste and water management, health and wellness, environment control, etc. By addressing the challenges of exploration, we will therefore invigorate innovation, competitiveness and economic growth well beyond the space sector itself. An active involvement in space exploration will contribute to attaining the Europe 2020 objectives of innovation, competitiveness, growth and employment.

EUROPEAN ECONOMY NET BENEFIT

ESA SPENDING LEADS TO ECONOMIC COMPETITIVENESS

Jean Jacques Dordain, Director General, ESA, 8.31.2011

[<http://www.research-europe.com/index.php/2011/08/jean-jacques-dordain-director-general-of-the-european-space-agency/>]

Each euro invested in space research leads to scientific progress and technological developments contributing to industrial competitiveness. The space infrastructure programmes provide numerous services to the citizens, contribute to Europe's security and encourage the youth to embrace scientific and technical careers. Thus each euro invested has a multiplying factor in very different fields from that of space and supports a competitive European economy and industry. European operators such as Eumetsat for weather forecast satellites, and Eutelsat and SES Global for telecommunication satellites, are the most successful in the world. In addition, over 35,000 highly qualified European men and women have a job in space-related activities. The European scientific communities involved in space are world class and the space research and innovation centres spread across Europe are recognised worldwide.

ESA SPENDING CAN BE A POWERFUL TOOL FOR ECONOMIC RECOVERY

Jean Jacques Dordain, Director General, ESA, 8.31.2011

[<http://www.research-europe.com/index.php/2011/08/jean-jacques-dordain-director-general-of-the-european-space-agency/>]

The greatest challenge for the ESA in the years to come will be to evolve so as to continue its string of successes. The overall context for space has changed in Europe, in particular with the new EU role, but also with the increased attention paid to security-related programmes. The context has also changed beyond Europe, as we can see with the newly published U.S. Space Policy. The ESA must continue to be able to respond to the challenges facing Europe, since space is a strategic tool required for numerous European policies. In this period of economic difficulty in Europe, we face challenges in ensuring that space can boost innovation and competitiveness. The space sector can be a powerful instrument for economic recovery. Space must also help understand and mitigate climate change by providing data and monitoring the impact of actions, together with other ground-based systems. Space-based systems are also crucial for the safety and security of Europe.

AT: EUROPE'S DEBT CRISIS

FRANCE AND GERMANY HAVE AGREED TO ACT

Michael Yoshikami, CEO, YCMNET Investment Committee, October 17, 2011

[<http://www.cnbc.com/id/44930950>]

Markets have welcomed promises by German Chancellor Angela Merkel and French President Nicolas Sarkozy to come up with a “comprehensive plan” for resolving the crisis by the end of October. French Budget Minister Valerie Pécresse said France would use public money to help with bank recapitalization if needed instead of using the European Financial Stability Facility. This is a positive move indicating that France is moving closer toward accepting Germany’s position on bank recapitalization. The latest efforts as announced by France and Germany suggest that they recognize that financial institutions desperately need to be recapitalized; we could not agree more.

AT: EUROPE'S DEBT CRISIS

THE GREEK DEFAULT PROBLEM WILL BE SOLVED

Fareed Zakaria, Washington Post, 10.12.2011

[http://www.washingtonpost.com/opinions/europes-real-problem-a-lack-of-growth/2011/10/12/gIQAUKkDgL_story.html?hpid=z3]

Europe faces two sets of problems. First, some of its governments have too much debt. Second, this debt is held by important European banks, which themselves face dangers as investors realize how much bad debt is on their books. Banks will be forced to raise capital to offset these loans. For Greece, some kind of default is inevitable, but it won't be called that. Going forward, there is likely to be some kind of bond insurance that will at least partly guarantee the debt of euro-zone countries. Though an imperfect solution, this would keep some pressure on countries with high debt loads while ensuring that the burden is not crippling. Additional pressure can be maintained — and additional funds raised — if the International Monetary Fund partners in these efforts.

GERMANY HAS COMMITTED TO SOLVING EUROPE'S SHORT TERM ECONOMIC PROBLEMS

Doyle McManus, Los Angeles Times, 10.16.2011

[<http://www.latimes.com/news/opinion/commentary/la-oe-mcmanus-merkel-europe-economy-20111016,0,7490479.column>]

That has made Europe's crisis bigger but, oddly enough, easier to fix, with considerable help from Merkel and her country. When it looked like a matter of bailing out feckless Greeks, Italians and Spaniards in their sunny vacationlands, German taxpayers understandably objected to paying the bill. But now that the problem has escalated into a crisis that could topple their own banks, the Germans and their cautious chancellor have changed sides and committed themselves to big, fast action, including an expanded European Financial Stability Facility fund to recapitalize the banks. Roger Altman, the former No. 2 in President Clinton's Treasury Department, has dubbed the idea "EuroTARP," after the U.S. Troubled Asset Relief Program. Like the American version, it's likely to be expensive and unpopular — but also necessary and, with luck, effective.

AT: EUROPE'S DEBT CRISIS

GERMAN ACTIONS MOVING EUROPE TOWARD INTEGRATION

Doyle McManus, Los Angeles Times, 10.16.2011

[<http://www.latimes.com/news/opinion/commentary/la-oe-mcmanus-merkel-europe-economy-20111016,0,7490479.column>]

Merkel's decision to act has had political implications far beyond the financial technicalities. The German leader had to choose between two stark alternatives: to make the Eurozone of 17 countries that have adopted a single currency a closer, more integrated economic unit, or to begin working on an orderly breakup. She opted for integration. "The euro is the guarantee of a united Europe," she told the German Parliament last month. "If the euro fails, then Europe fails."

ACTIONS TO SOLVE THE SHORT TERM ISSUES IN EUROPE WILL MAKE THE KEY PROBLEM ECONOMIC GROWTH WORSE

Michael Yoshikami, CEO, YCMNET Investment Committee October 17, 2011

[<http://www.cnbc.com/id/44930950>]

Taking a haircut, a write-down or adjusting original terms of any debt deals is an inevitable part of the solution. This will ultimately result in financial institutions absorbing the pain. This is an important recognition, and a reality that both Germany and France are finally facing. As a result, we are now seeing them stepping up efforts to work in a coordinated way to ring fence financial institutions that will likely be subject to defaults from marginal sovereign nations. Reality finally seems to be apparent to European leaders. The net result, if effectively implemented, will be to stem the panic in these financial institutions. Secondly, in a coordinated way, the write down of assets that are clearly not worth what they once were will finally occur. The cascading effect from this write down will be that the stronger sovereign nations including Germany and France will now be required to pick up a bigger burden in order for the European Union to be a functioning body. The net result will be lower GDP growth across Europe for a significant period of time. We believe because the nature of the problem is related to sovereign debt rather than corporate debt, the resulting impact will be greater than what was seen in the U.S. Europe is entering into the phase of "sober recapitalization" and this will impact their overall standard of living and GDP growth for years to come. In reality, Europe is already in this phase, as is the U.S., and consumers and businesses have been extremely cautious as they allocate funds in this very difficult environment.

AT: EUROPE'S DEBT CRISIS

EUROPE'S REAL PROBLEM IS WITH GROWTH, NOT BUDGETS

Fareed Zakaria, Washington Post, 10.12.2011

[http://www.washingtonpost.com/opinions/europes-real-problem-a-lack-of-growth/2011/10/12/gIQAUKkDgL_story.html?hpid=z3]

Ultimately, however, Europe's crisis is one of growth. The problem is not so much that Greece has been unwilling to make sacrifices. It has made many. But Greece's budget numbers look bleak because its growth forecast looks bleak. It needs to address a much larger question of competitiveness. What can the Greek economy do to attract capital and investment? And at what wage levels? These are questions most European countries will need to answer to fully solve their problems. Italy's economy has not grown for an entire decade. No debt restructuring will work if it stays stagnant for another decade. Even Germany is not immune, with an average growth rate of only 1.5 percent. German officials know that, with a declining population, in five to seven years the country is likely to grow at an annual rate of just 1 percent. That's not much of an engine for Europe." Europe needs a crisis agenda to get out of its bind, but beyond that it needs a growth agenda, which involves radical reform.

AT: EUROPE KEY TO US

EUROPE'S ECONOMIC HEALTH IMPORTANT TO U.S. HEGEMONY

Doyle McManus, Los Angeles Times, 10.16.2011

[<http://www.latimes.com/news/opinion/commentary/la-oe-mcmanus-merkel-europe-economy-20111016,0,7490479.column>]

Americans have a stake in their success. A European recession could push the U.S. economy into a double dip. And U.S. banks aren't immune from the European disease. It's estimated that American banks hold more than \$600 billion in government bonds issued by the PIIGS — Portugal, Italy, Ireland, Greece and Spain. A successful Europe is good for U.S. foreign policy as well. When European countries feel prosperous, they're more able to contribute to joint actions abroad, such as the war in Afghanistan or the bombing in Libya. If Europe is divided and poor, our allies may not be as helpful as we'd like.

EUROPE ECONOMY KEY TO US

THE U.S. HAS BARELY SKIRTED A RECESSION, THE REAL THREAT COMES FROM EUROPE AND EUROPE NEEDS TO TAKE QUICK, STRONG STEPS

Reuters 10.14.2011

[<http://www.reuters.com/article/2011/10/14/us-usa-economy-growth-idUSTRE79D5X920111014?feedType=RSS&feedName=topNews>]

Consumers and businesses pulled the sickly U.S. economy back from the brink of recession in the third quarter but don't pop the champagne just yet. After wobbling early in the quarter, the economy regained some footing, with retail sales rising solidly in September and labor market conditions improving. Business spending has held up despite volatility in financial markets and factory activity has kept expanding. Economists now estimate U.S. gross domestic product grew at an annual pace of between 2.3 and 2.7 percent in the July-September period, a sharp step up from the 1.3 percent logged in the first quarter and a far cry from what some feared just a few weeks ago. "The economy held up surprisingly well in the third quarter but it's too early to celebrate," said Ryan Sweet, a senior economist at Moody's Analytics in West Chester, Pennsylvania. Much of the re-acceleration in growth reflects the fading of disruption to motor vehicle production and sales after the big March earthquake in Japan. A surge in auto sales contributed to a solid 1.1 percent rise in retail sales in September. Declining gasoline prices, which stretched household budgets in the second quarter and crimped consumer spending, are also seen supporting third-quarter economic growth. But those factors should prove temporary, and with Europe's economy likely to slow as it battles its debt crisis and the U.S. labor market still weak, economists believe the fourth quarter will prove weaker, with some fearing a contraction in the first half of 2012. "The euro zone debt crisis is still playing out. That remains a dark cloud on the horizon that can present a direct hit to the U.S. economic recovery," said Anthony Karydakis chief economist at Commerzbank in New York. Although European leaders sound determined to come to grips with the debt crisis and could announce a bold plan in the next couple of weeks, analysts worry they might once again move too slowly for jittery financial markets.

EUROPE ECONOMY KEY TO US

THE DOUBLE DIP RECESSION DEPENDS ON EUROPE, NOT THE U.S.

First Post, August 8, 2011

[<http://www.firstpost.com/fwire/double-dip-recession-depends-on-europe-not-us-greenspan-55850.html>]

Former Federal Reserve Chairman Alan Greenspan on Sunday downplayed the risk of a double-dip recession in the United States, saying its domestic economy was in better shape compared to its European peers. A double-dip recession “depends on Europe, not the United States,” Greenspan told NBC television’s “Meet the Press.” “The United States was actually doing relatively well — sluggish, but going forward until Italy ran into trouble.” Europe, which buys a quarter of US exports and houses the operations of many American companies, would determine the course of the US economy’s recovery, Greenspan said.

THE GLOBAL ECONOMY DEPENDS ON EUROPE

Reuters, September 23, 2011

[www.cnbc.com/id/44642929/Euro_zone_s_future_depends_on_Germany_Italy_s_Tremonti]

The future of the world economy depends on the euro zone's ability to resolve its debt crisis and this in turn depends on whether Germany can overcome its "uncertainties" and understand that saving the euro is in its own interests, Italian Economy Minister Giulio Tremonti said on Friday. Interviewed by Sky Italia, Tremonti said that three years ago decisive action by world leaders managed to contain the financial crisis that began in the United States, but now Europe was the heart of the problem. "Now everything depends on Europe, and Europe depends on Germany, and that depends on the capacity Germany must have to overcome its uncertainties and understand that Europe is in everyone's interests, including theirs", he said. (Reporting By Gavin Jones)

EUROPE ECONOMY KEY TO US

ECONOMIC SOLUTIONS IN EUROPE WOULD BOLSTER CONSUMER AND INVESTOR CONFIDENCE IN THE U.S.

Reuters October 20, 2011

[<http://www.foxbusiness.com/markets/2011/10/20/us-to-europe-find-way-to-stop-crisis/>]

Brainard (Undersecretary of International Affairs) said U.S. interest in Europe's well-being stems partly from the fact that U.S. recovery "remains fragile and all too vulnerable to disruption beyond our shores." More stability in Europe would bolster consumer and investment confidence that was shaken during the summer by a contentious debate over raising the U.S. debt limit and hurt more as the European crisis intensified.

EUROPE ECONOMY KEY TO US

EUROPEANS CAN BRING THE US IN UNDER EUROPEAN LEADERSHIP

Justin Vaisse, Director of Research, European Council on Foreign Relations, 3.30.11

[http://www.brookings.edu/reports/2011/0330_european_scorecard_vaisse.aspx]

At a global level, European leaders finally woke up to the fact that they inhabit a “post-American world”. The relationship with the United States is still the densest one that the EU enjoys, but it no longer has the powerful emotional significance it had over the last few decades. This “normalization” reflects the fact that the United States is no longer such an obvious provider of public goods to the EU in the security realm or the economic sphere: for example, whereas in the 1990s Europe needed American help to save the Balkans, much of Europe now blames the United States for the financial crisis. As a result, Europeans have shown themselves more willing to stand up to the United States on key issues and in some cases have been remarkably successful in getting U.S. cooperation. In the past, the leaders of member states tended to coordinate policy with the United States before they did so with each other and often acted in order to preserve their bilateral “special relationships” with the United States rather than their own collective interests – for example, on Afghanistan. In 2010, on the other hand, the EU had significant successes when it identified its common interests and pursued them with the United States in a single-minded way. For example, the EU managed to get the United States to commit to a multilateral route on Iran and to accept a renegotiated deal on the availability of SWIFT financial data that better preserves the rights and privacy of Europeans. In this new approach with the United States, the surprise heroes were the European Parliament, which blocked the SWIFT deal, and High Representative Catherine Ashton, who managed to use her burgeoning relationship with Secretary of State Hillary Clinton to steer the Iran process through the UN.

AT: PERM

- 1. THE PERM LINKS TO THE SPENDING AND POLITICS DA BECAUSE IT INCLUDES US ACTION.**
- 2. COOPERATION IS NOT A PART OF THE PLAN OR COUNTERPLAN, THE PERMUTATION WOULD BE TWO SEPARATE, INEFFICIENT PROGRAMS WITH NO EUROPEAN LEADERSHIP. COMBINING THE TWO WOULD BE ILLEGITIMATE.**
- 3. AN INDEPENDENT PROGRAM IS ESSENTIAL FOR THE ECONOMIC BENEFITS TO EUROPE**

Francios Gayet, Secretary General of the AeroSpace and Defense Industries, 5.6.10

[www.asd.europe.org/site/fileadmin/user_upload/advocacy/ASD_Comments_on_the_future_EU_2020_Strategy_-_Final.pdf]

Finally, it should also be noted that space, being a sector where R&D is very intensive, contributes therefore critically to Europe competitiveness. In addition to programmes with direct “down to Earth” benefits like Galileo and GMES, EU should now consider being an active partner in space exploration, contributing to the international endeavour with key building blocks, following an approach based on interdependency. To reap all benefits of space activity, Europe must ensure that it maintains alive the industrial capabilities to undertake space programmes with the appropriate level of autonomy. This also requires that Europe maintains appropriate access to space capabilities, with all required infrastructures.

Dan Thisdell 6.14.11

[<http://www.flightglobal.com/articles/2011/06/14/357539/europe-outlines-future-in-space.html>]

The European Commission spelled this vision out with admirable clarity in an April 2011 paper detailing its priorities for a new, "reinforced" European space policy, which will emerge from the coming rounds of EU budget making. As commission vice-president for industry Antonio Tajani puts it, space is about improving the safety and daily lives of Europeans. He says: "Space is strategic for Europe's independence, job creation and competitiveness. Space activities create high-skilled jobs, innovation, new commercial opportunities and improve citizens' well-being and security." And, he adds: "In order to achieve our goals, Europe needs to keep an independent access to space."