EUROPEAN COMMISSION
Audiovisual Services

EU: High Technology

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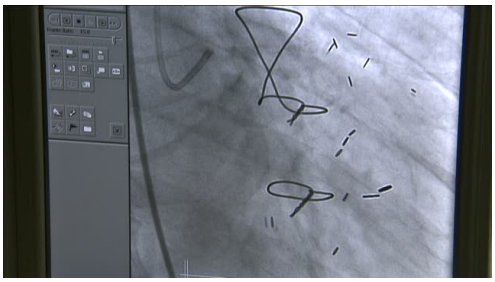

The European Union currently funds the largest single research programme on the planet – the Seventh Framework Programme - with a budget of more than €53 billion for the period 2007-2013. Since its beginning in 2007, it has already provided more than €12 billion of funding for research. Adopting the Europe 2020 strategy, Europe's political leaders have put research and innovation at the top of the European political agenda, making it the cornerstone of plans for investment in sustainable growth and jobs. On 20/07/2010, Máire Geoghegan-Quinn, Member of the EC in charge of Research, Innovation and Science, will announce the biggest ever call for proposals to fund European research and innovation, totalling over € 6 billion. The scale of funding for 2011 alone will give a significant boost to jobs and economic growth in cutting-edge sectors across the European Union. To illustrate this important subject, the Audiovisual Services of the EC have produced a new video stockshots on high technology, which contains the following images of: - transport: maritime and urban; - automotive industry; - aviation and space technology; - energy; - health and medicine; - sound and image technology; - construction and safety; - artificial intelligence and robotics; - nanotechnology and photonics; - and innovation platforms.

Only the original language version is authentic and it prevails in the event of its differing from the translated versions.

TIME	DESCRIPTION	DURATION
10:00:00	Credits and title	00:00:20
10:00:20	1. TRANSPORT	00:00:04
10:00:20	Title	00:00:04
10:00:24	Maritime Transport	00:04:48
10:00:24	Title	00:00:04
10:00:29	Port of Rotterdam and the Maersk control office, The Netherlands (2 shots) Maersk Advanced Shipping Logistics/Technology: Maersk Line is one of the leading shipping companies in the world, and is developing several high technology advances, which can be applied to the different vessels, in order to increase their efficiency and reduce the environmental impact. Estelle Maersk is the largest container ship in the world. A key technological development is the Exhaust Heat Recovery System onboard this vessel. This new system, which allows for exhaust emissions to be used to produce electricity onboard, which can generate energy savings of up to 10% For more information on Maersk maritime technology, see www.maersk.com	00:00:15

	technology, see www.indecrt.com	
10:00:45	Engineers controlling the exhaust system from the control room (9 shots)	00:00:45
10:01:30	Cranes moving containers around the port terminal (4 shots)	00:00:22
10:01:53	Estelle Maersk vessel (2 shots)	00:00:14
10:02:08	Crane unloading the containers from the ship (7 shots)	00:00:59
10:03:07	Bridge (3 shots)	00:00:20
10:03:28	Engineer carrying out a security check, heat conducting pipes (17 shots)	00:01:34
10:05:03	Exterior views of the Estelle Maersk vessel (2 shots)	00:00:10
10:05:13	Urban Transport	00:04:17
10:05:13	Title	00:00:04
10:05:18	Exterior views of GMV (innovating solutions) in Valladolid, Spain (2 shots) GMV: GPS WIFI technology for city buses, Spain This company is one of the stars of the European Space Agency's business incubators initiative. This project's goal is to find civilian uses for research, products and applications originally developed for space. This concrete application is based on the development of GPS WIFI technology, to be applied to trains and buses in Spain, to improve safety and transport efficiency. A software programme has been developed for the local bus company, which lets the company know the exact position of every, bus at any given moment, and allows them to adapt the schedules to traffic conditions.	00:00:10
10:05:28	Engineer working on bus information electronic panels (10 shots)	00:01:05
10:06:33	Engineers manufacturing the GPS systems which will be installed in the buses (10 shots)	00:00:54
10:07:27	IT specialists working on the software programme (6 shots)	00:00:29
10:07:57	City of Valladolid, Spain (2 shots)	00:00:10
10:08:07	Bus stop with people waiting for next to the information panel (2 shots)	00:00:14
10:08:21	Bus with passengers (4 shots)	00:00:28
10:08:49	Bus arriving to the AUVASA headquarters, Valladolid	00:00:05
10:08:55	AUVASA staff checking the location of buses around the city (7 shots) With this system, they are able to calculate the waiting times for passengers and change the bus schedules.	00:00:35
10:09:30	2. AUTOMOTIVE INDUSTRY	00:05:24
10:09:30	Title	00:00:04

10:09:35	Exterior views of the Daimler Mercedes-Benz car factory, Mannheim, Germany (2 shots) SiWear project developed by SAP and being tested at the Daimler factory in Germany. This future technology, which is worn directly on the body and can support production and commissioning processes, is based on SAP NetWeaver Mobile. The new technology is sponsored by the German Federal Ministry of Economics and Technology. For more information, see: http://en.sap.info/siwear-augmented-reality-virtual-glasses/19687	00:00:10
10:09:46	Daimler factory where truck engines are assembled (3 shots)	00:00:18
10:10:04	Factory worker putting on the SiWear head mounted display (4 shots)	00:00:28
10:10:32	Factory worker using the SiWear vision to perform the picking operations (8 shots)	00:01:10
10:11:43	Assembly line workers using the tools to assemble the engines (10 shots)	00:00:57
10:12:40	Renault car safety tests: safety test room with workers testing the performance of a car, with the Open GL Performer software (6 shots). For more information, see: www.renault.com.au/about-us/safety/	00:01:22
10:14:03	Fluence ZE, one of the zero emissions electric car models being developed by Renault, driving in the city (3 shots). For more information, see: www.renault-ze.com	00:00:20
10:14:23	Dashboard information	00:00:15
10:14:39	Fluence ZE in the city streets (3 shots)	00:00:15
10:14:54	3. AVIATION AND SPACE TECHNOLOGY	00:07:28
10:14:54	Title	00:00:04
10:14:59	Airbus: NACRE project animations Pro Green Aircraft PG1: low noise propulsion, integration of vital engine technology, acoustic driven powerplant installation, high-efficiency wings (3 shots) The EU-funded NACRE (New aircraft concept research) project is working to integrate and validate technologies, that will enable new aircraft concepts to be assessed and developed. Over the past 50 years, the main goal for aircraft design has been to improve operational efficiency, particularly by reducing fuel consumption. Given that air traffic is predicted to more than double in the next 20 years, and that both environmental and economic pressures will strongly increase, Airbus is already busy developing new aircraft concepts. For more information, see: www.airbus.com	00:00:33
10:15:33	Pro Green Aircraft PG2: highly efficient propulsion, powered tail designs	00:00:31

10:16:05	Simple Flying bus: manufacture driven components, cost-efficient integration, more efficient adaptive tails (2 shots)	00:00:19
10:16:25	Payload driven aircraft: unconstrained innovation for seats, realistic cabin design and flying wings (2 shots)	00:00:23
10:16:48	Animation showing all NACRE designs	00:00:09
10:16:57	A380 taking off Airbus: Brake-to-Vacate (BTV) and included Runway Overrun Warning (ROW) & Runway Overrun Prevention (ROP) systems By harnessing the power of the A380 integral GPS, and airport database based On-Board Airport Navigation System, combined with the Auto-Flight and Auto-Brake facilities, BTV gives pilots real-time visibility on realistic braking distances, to reach their preferred exit. When the pilot chooses a runway exit point, the system indicates the estimated runway occupancy time, and the minimum turnaround time. The aircraft's deceleration is automatically regulated, so it reaches the chosen exit at the correct speed. The complementary ROW/ROP system computes realistic operational landing distances and compares them to the available landing distance in real time. BTV and ROW/ROP were first tested on an A340-600 in 2004, and on the A380 in May 2008.	00:00:17
10:17:15	Cockpit with pilots (3 shots)	00:00:06
10:17:22	A380 during flight	00:00:07
10:17:29	A380 trying to land, and ROW system warning the pilots that the runway is too short. The pilots abort the landing manoeuvre and take off again (10 shots)	00:00:34
10:18:03	A380 during flight	00:00:07
10:18:10	A380 successful landing (3 shots)	00:00:14
10:18:25	Meeting on the Vinci space motor design and motor animations (7 shots) Vinci space motor is the new cryogenic engine, intended for Ariane 5's new upper stage, and is being developed and tested by Snecma in France (Safran group). With nearly 40,000 pounds of thrust (180 kN), the Vinci engine uses the expander cycle, giving it high performance, and the ability to restart in flight. It incorporates a number of advanced technologies, made by Snecma Propulsion Solide, using a carbon composite, and combines high performance and reliability with economical operation. As it can be reignited in orbit, it helps the orbital positioning of satellites, launched during the same mission. For more information, see: www.snecma.com	00:00:37
10:19:02	SNECMA facilities: Vinci motor and scientists at work, Vernon, France (11 shots)	00:01:13

10:20:15	ESA's Ariane 5 space rocket lifting off (2 shots)	00:00:07
10:20:22	View from the top of the Roque de los Muchachos mountain, where the Gran Telescopio Canarias is located, Island of La Palma in the Canary Islands, Spain The Gran Telescopio Canarias (GTC) is the largest optical telescope in the world, and is located at the Roque de los Muchachos Observatory on La Palma. The mirror consists of 36 hexagonal pieces, which can be moved separately from each other, and the shape of each piece can be changed. These two types of movements can compensate for the changes in the observed light, that are caused by turbulence in Earth's atmosphere. The project is actively supported by both the Spanish Government and the Local Government, through the European Funds for Regional Development (FEDER) provided by the European Union. For more information, see: www.gtc.iac.es	00:00:05
10:20:27	Exterior views of the Gran Telescopio Canarias (GTC) (12 shots)	00:01:07
10:21:34	Interior views of the Gran Telescopio Canarias (GTC) (8 shots)	00:00:48
10:22:23	4. ENERGY	00:03:00
10:22:23	Title	00:00:04
10:22:28	SIEMENS wind turbines with engineers carrying out maintenance work, and general views of a wind farm (8 shots)	00:00:48
10:23:16	Animation showing the energy supply of a futuristic city and house	00:00:17
10:23:33	Construction of Siemens solar collectors by SOLEL solar systems (5 shots)	00:00:20
10:23:53	Thermo solar plant in the desert (6 shots)	00:00:15
10:24:09	Exterior view of a Siemens factory	00:00:05
10:24:14	Construction of a gas turbine (6 shots) Developed by Siemens, the SGT5-8000H "Irsching" turbine is the largest gas turbine in the world. The increase of efficiency by 2 percentage points, compared to a state-of-the-art combined cycle power plant, will result in approximately 40,000 tons less CO2 per year.	00:01:08
10:25:23	5. HEALTH AND MEDICINE	00:09:58
10:25:23	Title	00:00:04
10:25:28	Exterior and interior views of the Quirón Hospital and reception area, Barcelona, Spain (4 shots)	00:00:28

10:25:57	Surgeon teaching students how to use a simulator for arthroscopic operations (8 shots) In the field of medical research, GMV is also developing medical simulators for complex chirurgical interventions, such as arthroscopies. This technology allows surgeons to perform non-invasive surgery, minimising the risks for patients.	00:01:00
10:26:57	View of the operation rooms	00:00:09
10:27:07	Real arthroscopy operation performed on a patient, with screens showing the different interventions (11 shots)	00:01:04
10:28:11	Surgical area	00:00:05
10:28:16	Exterior view of the Siemens Medical Solutions Diagnostics Research Laboratory	00:00:06
10:28:23	Researchers working on the biolab (15 shots)	00:01:13
10:29:36	Exterior view of a Siemens factory, Germany	00:00:07
10:29:43	Production of CT scanners (10 shots)	00:01:03
10:30:47	Doctor examining a patient using a "Somatom Cardiac" scanner, and images of the heart and thorax on the computer screen (7 shots)	00:00:28
10:31:16	Eindhoven, The Netherlands (2 shots)	00:00:10
10:31:26	Exterior views of the Catharina Hospital and reception area, Eindhoven, The Netherlands (5 shots)	00:00:25
10:31:51	Philips Ambient Experience: surgeons preparing the Philips machine for the operation, Catharina Hospital, Eindhoven (5 shots) This project integrates architecture, design and enabling technologies, to allow patients to personalise their environment and create a relaxing atmosphere.	00:00:27
10:32:19	Surgeons washing their hands before the operation (3 shots)	00:00:15
10:32:34	Patient undergoing heart surgery with the Philips Ambient Experience machine, and doctors using LCD screens to monitor the operation (30 shots)	00:02:41
10:35:16	Surgical unit	00:00:05
10:35:22	Title	00:00:00
10:35:22	6. SOUND AND IMAGE TECHNOLOGY	00:06:19
10:35:27	Exterior views of the Bang & Olufsen headquarters in Struer, Denmark (3 shots) Bang & Olufsen is a Danish company that designs and manufactures highend audio products, television sets, and telephones. For more information on the company, see: www.bang-olufsen.com	00:00:15

10:35:42	Anodising process applied to the Beo Vision 10 model components (7 shots)	00:00:47
10:36:29	Using laser print technology to print the Bang and Olufsen logo on the BeoVision 10 frames (6 shots)	00:00:35
10:37:05	Final assembly of the BeoVision 10 TV sets (18 shots)	00:01:48
10:38:54	Image tests (9 shots)	00:00:53
10:39:47	Sound engineer testing the BeoVision 10 television in "The Cube" (13 shots) This large space is designed specifically to test the acoustics of new Bang & Olufsen products.	00:01:29
10:41:16	Bang & Olufsen products (3 shots)	00:00:24
10:41:41	7. CONSTRUCTION AND SAFETY	00:05:06
10:41:41	Title	00:00:04
10:41:46	Exterior view of SELCOM Multiaxial Technology, Fregona, Italy Polytect, a European research project based in Venice, is working on multifunctional textiles of the future. These materials, based on glass filters, are intended to protect structures during or after earthquakes, landslides and other natural disasters. With built-in fibre-optic cable sensors, they will be able to see, hear and smell trouble before it happens. For more information on this project, see www.polytect.net	00:00:10
10:41:57	Manufacturing glass fibre textiles that will later be applied to the walls of a house, in order to stabilise them in the event of an earthquake (26 shots)	00:02:36
10:44:34	Exterior views of the European Centre for Training and Research in Earthquake Engineering, Pavia, Italy (4 shots)	00:00:20
10:44:54	Polytect project and EU Centre engineers working on the use of SELCOM glass fibre textiles, in the structure of a house, which will then be tested to see what would happen in the event of an earthquake (7 shots)	00:00:46
10:45:41	Engineers adding sensors to the textile, in order to monitor the behaviour of the structure (8 shots)	00:00:45
10:46:26	Engineers looking at structure behaviour models on a computer (2 shots)	00:00:16
10:46:43	General view of the structure of the house	00:00:05
10:46:48	8. ARTIFICIAL INTELLIGENCE AND ROBOTICS	00:09:51
10:46:48	Title	00:00:04
10:46:53	Barcelona, Spain (2 shots)	00:00:22
10:47:16	Exterior views of the University Pompeu Fabra, Barcelona (3 shots)	00:00:15

10:47:31	"Presenccia project": members of the research team walking to the virtual reality laboratory, Barcelona (3 shots) The aim of the "Presenccia project" is to understand how humans can exist in physical and virtual environments, and experience this, at a scale that is psychologically realistic and believable. For more information on this project, see: http://www.presenccia.org/	00:00:19
10:47:51	Members of the research team experimenting with the virtual reality set (14 shots)	00:01:28
10:49:20	Exterior views of the University of Barcelona, Barcelona (2 shots)	00:00:10
10:49:30	University's Robotics department research team experimenting with virtual realities, with the help of specially designed 3D goggles, and a head mounted display (18 shots)	00:01:49
10:51:19	Exterior views of the Free University of Berlin, Berlin (2 shots)	00:00:10
10:51:29	Research team members testing the software programme in the "Spirit of Berlin"'s automated car (19 shots) The Spirit of Berlin is an Artificial Intelligence project directed by Prof. Raul Rojas, at Freie Universität, Berlin. It is a vehicle that is completely controlled by computers, without a human operator. Computers process information provided by the navigation system, laser sensors and video cameras, which makes the robotic car very versatile and useful for, among other things, the surveillance of large enclosed areas and warehouses. The car, that can also be driven conventionally, is being further developed to recognize and react to red traffic lights and traffic signs. The prototype car can be controlled either with a simple iPhone (using remote control technology), or by responding to the eye movement of a remote user. So that if the person looks to the right, the car turns to the right. For more information on this project, see http://robotics.mi.fu-berlin.de	00:01:49
10:53:18	Team researchers testing a car using an iPhone and eye recognition system, near Berlin (3 shots)	00:00:30
10:53:48	Nuremberg, Germany (2 shots)	00:00:10
10:53:58	Exterior views of 's Baggers, an automated restaurant, Nuremberg, Germany (2 shots) As everything is computerised, customers at 's Baggers restaurant use touchscreen TVs, to choose their meal. Food is delivered using machines and there are no waiters.	00:00:10
10:54:08	Customers placing their orders via the touchscreens (6 shots)	00:00:26
10:54:35	Orders being received and prepared in the kitchen (11 shots)	00:01:08
10:55:43	Delivering orders to customers (9 shots)	00:00:56
10:56:40	9. NANOTECHNOLOGY AND PHOTONICS	00:05:37
10:56:40	Title	00:00:04

10:56:45	City of Jena, Germany (2 shots)	00:00:10
10:56:55	Exterior views of the Institute of Photonic Technology (IPHT), Jena (2 shots) The IPHT is working on photonics as a key technology and motor for innovation, and is developing applications in the field of security, biology and nanotechnology. For more information, see: www.ipht-jena.de/	00:00:10
10:57:05	THz Videocam: research team members working on the security videocamera (5 shots) This videocamera carries out a security screening (e.g. at the airport) by passively tracing the shadow of suspicious objects, on the terahertz emission from the human body without exposing too detailed images of the human body. Thus it intentionally eliminates the 'naked appearance' of such recorded images which could cause offence.	00:00:28
10:57:33	Videocam machine (3 shots)	00:00:21
10:57:55	Videocam test (7 shots)	00:00:45
10:58:40	Production of thin-film solar cells based on single crystalline silicon nanowires (7 shots) This technology combines the light trapping properties of Si nanowire arrays with thin-film technology.	00:00:53
10:59:34	Finished thin solar cells (3 shots)	00:00:16
10:59:50	Exterior view of the Physical Chemistry Institute of the Friedrich Schiller University, Jena (2 shots)	00:00:10
11:00:00	Online-Monitoring and Identification of Bioaerosols (OMIB): researchers working on the identification of bacteria (24 shots) Bacteria are virtually everywhere but in certain situations, the presence of a single bacteria cell can be fatal, for instance in the air in operating rooms. Using micro-Raman spectroscopic identification technology, the IPHT has developed a portable device, that can characterise a single, even previously unknown bacteria within a second.	00:02:17
11:02:18	10. INNOVATION PLATFORMS	00:04:15
11:02:18	Title	00:00:04
11:02:23	Exterior views of Living Tomorrow, near Brussels, Vilvorde, Belgium (2 shots) Living Tomorrow is a forum for high-technology innovators in industry, to introduce visitors to services and products with the potential, to improve the quality of living and working in the future. Living Tomorrow selects leading-edge companies in different fields whose products, services and technologies point the way to the future. For more information, see: www.livingtomorrow.be	00:00:10
11:02:33	Kitchen area with woman ordering food via the wall computer (8 shots)	00:00:35

11:03:08	Cooking instructions displayed automatically on the TV screen (2 shots)	00:00:21
11:03:29	Cocoon for children and woman controlling the inside temperature, level of oxygen, etc.. (8 shots)	00:00:36
11:04:06	Parents' bathroom with woman touching the interactive mirror, displaying information such as the daily news, weather forecast, but also health information such as allergy controls (6 shots)	00:00:22
11:04:29	Elderly person's apartment, with woman showing the sensors installed under the bedside carpet, which would send an alarm message to the hospital, if the old person should have a hard fall (5 shots)	00:00:15
11:04:45	Bathroom in elderly persons apartment with woman, showing how the toothbrush displays both the heartbeat and blood pressure, and reminds the person of the medication she/he needs to take (6 shots)	00:00:26
11:05:11	Supermarket of the future, with woman simulating a customer buying products with the help of a computer (13 shots)	00:01:09
11:06:21	Copyright	00:00:12

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