EUROPEAN COMMISSION
Audiovisual Services

European Geostationary Navigation Overlay Service: EGNOS

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The European Geostationary Navigation Overlay Service (EGNOS) is Europe's first venture into satellite navigation. It augments the two military satellite navigation systems now operating, the US GPS and Russian GLONASS systems. It makes them suitable for safety critical applications, such as flying aircraft, or navigating ships, through narrow channels. Consisting of three geostationary satellites and a network of ground stations, EGNOS achieves its aim by transmitting a signal containing information on the reliability, and accuracy of the positioning signals sent out by the Global Positioning System (GPS) and the Global Orbiting Navigation Satellite System (GLONASS). It allows users in Europe and beyond, to determine their position to within 2 metres, compared with about 20 metres for GPS and GLONASS alone. EGNOS is a joint project of the European Space Agency (ESA), the European Commission (EC) and Eurocontrol, the European Organisation for the Safety of Air Navigation. It is Europe's first activity in the field of Global Navigation Satellite Systems (GNSS), and is a precursor to GALILEO, the full global satellite navigation system, under development in Europe. This video stockshots contains archive footage illustrating the following subjects: - the use of EGNOS in aviation; - the use of EGOS in transport; - the use of EGNOS for disabled people; - the use of EGNOS in agriculture; - and the use of EGNOS for maritime affairs.

HEURE	DESCRIPTION	DUREE
00:00:00	Credits and title	00:00:20
00:00:20	1.USE OF EGNOS IN AVIATIONThe added value of EGNOS for civil aviation, is that it corrects GPS errors not just for horizontal, but also for vertical guidance, making it extremely useful for aviation. Furthermore, for an aircraft landing with the support of EGNOS, the information is displayed in the same way as conventional ILS (Instrument Landing System) for more convenience.	00:08:36
00:00:20	Title	00:00:04
00:00:24	Taking off of an aircraft : observation from a control tower	00:00:10
00:00:34	Aircrafts in the air	00:00:01
00:00:35	Pilot and co-pilot checking the parameters in the cockpit (6 shots)	00:00:23
00:00:58	Screen showing the lateral and vertical guidance provided by EGNOS EGNOS provides guidance for landing even at airports which are not equiped with ILS.	00:00:09

00:01:07	Engineer using EGNOS system on a laptop	00:00:03
00:01:10	Demonstration of the added value of EGNOS for civil aviation (3 shots)EGNOS corrects GPS errors for horizontal but also for vertical guidance, making it extremely useful for aviation.	00:00:13
00:01:23	3D virtual representation of the use of EGNOS in aviation, showing the transmission of the signals from the satellites to an aircraft	00:00:12
00:01:35	3D virtual representation of the signal transmission (2 shots)This 3D virtual representation shows the transmission of signals from satellites, to the 40 reference stations installed in more than 20 countries. These stations relay the signals from the satellites to the ground infrastructure.	00:00:20
00:01:55	Virtual representation of an aircraft guided by EGNOS throughout its landing approach. EGNOS allows the approach to start at a lower altitude compared with conventional means.	00:00:08
00:02:03	Control tower and landing of an aircraft (3 shots)	00:00:12
00:02:15	Virtual aircraft landing with the support of EGNOS, with information displayed in the same way as conventional ILS, for more convenience	00:00:04
00:02:19	Real landing using EGNOS	00:00:04
00:02:23	3D representation of satellites	00:00:11
00:02:34	Airport sign and control tower	00:00:05
00:02:39	Aircraft in a hangar	00:00:09
00:02:48	Engineer controling the aircraft	00:00:05
00:02:53	Experimental chart of EGNOS on test followed by the test (7 shots)	00:00:42
00:03:35	Two aircrafts	00:00:05
00:03:40	Installation of a GNSS receiver using EGNOS in a cockpit (6 shots)	00:00:42
00:04:22	Take-off of an aircraft	00:00:07
00:04:29	Virtual demontration of a curved landing approach using EGNOS, and of guidance for landing with low visibility and without ILS ground equipment (5 shots)	00:01:11
00:05:40	Torrejón Control Centre (TCC), near Madrid: external and internal shots (2 shots)	00:00:14
00:05:54	Members of the TCC entering the EGNOS control facilities	00:00:06

00:06:00	TCC engineer explaining how EGNOS works (6 shots)	00:00:33
00:06:33	TCC employees at work (4 shots)	00:00:18
00:06:51	Demonstration of an alarm used in case of a loss of reliability of the GNSS (GPS) signals corrected by EGNOS, TCC Madrid (6 shots)	00:00:33
00:07:24	Engineer entering the ground relay station cabin, and shot of the plan dish, TCC Madrid	00:00:13
00:07:37	Engineer checking the system inside the relay station (4 shots)	00:00:22
00:07:59	Back of the satellite dish	00:00:05
00:08:04	Engineer collecting data transmitted by EGNOS, passing the disc to a colleague for further processing (4 shots)	00:00:32
00:08:36	Exterior of the TCC and view of the satellites (3 shots)	00:00:20
00:08:56	2.USE OF EGNOS IN TRANSPORTEGNOS is used for car, bus and lorry navigation, and is linked to a system which would report an accident and request assistance. Guidance is available more widely reducing substantially the risk of road toll invoicing errors.EGNOS is also used for aerial navigation. Aviation may act as a catalyst for adoption of similar systems on railway to improve safety.	00:06:56
00:08:56	Title	00:00:04
00:09:00	EGNOS being used for a car navigation (4 shots)	00:00:13
00:09:13	Monitoring road traffic using EGNOS (2 shots)	00:00:05
00:09:18	EGNOS allows for virtual road tolling, eliminating the need for stopping at a toll booth, because monitoring can be done in a remote location (3 shots)	00:00:09
00:09:27	EGNOS being used for car navigation, linked to a system used to report an accident and request assistance (4 shots)	00:00:14
00:09:41	Acropolis, Athens, Greece	00:00:02
00:09:43	EGNOS being used for security applications (17 shots)	00:00:56
00:10:39	Virtual demonstration of the transmission of EGNOS signals to cars and buses (4 shots)	00:00:57
00:11:36	EGNOS being tested for tracking and guiding a train (10 shots)	00:01:03
00:12:39	Satellite signals receiver and transmitter (3 shots)	00:00:17

00:12:56	Facility for processing EGNOS data at the GRAIL project, and engineers testing the use of EGNOS in rail transport (8 shots)	00:00:43
00:13:39	Virtual view of the use of EGNOS in rail transport	00:00:05
00:13:44	EGNOS being used to track and monitor the transport of animals, to ensure compliance with regulations, aimed at ensuring the well-being of animals during transportation (4 shots)	00:00:35
00:14:19	Navigation device using EGNOS (3 shots)	00:00:15
00:14:34	Truck driver getting into its cabin (2 shots)	00:00:17
00:14:51	Close up of the navigation and monitoring device inside the truck	00:00:05
00:14:56	virtual transmission of satellite signals	00:00:04
00:15:00	Detection of the truck's position based on EGNOS, and communication of an alarm indicating the too high temperature inside the truck (9 shots)	00:00:44
00:15:44	Truck on the road	00:00:08
00:15:52	3.USE OF EGNOS FOR DISABLED PEOPLEEGNOS is used for personal satellite navigation needs, and for assistance to a person, whose position needs to be monitored for health-related reasons.	00:02:28
00:15:52	Title	00:00:04
00:15:56	Virtual satellite	00:00:02
00:15:58	Use of EGNOS for assistance to a person whose position needs to be monitored for health-related reasons: communication between the monitoring centre and a family member (12 shots)	00:00:26
00:16:24	Use of EGNOS to locate a person thanks to the receiver worn on his wrist (7 shots)	00:00:16
00:16:40	3D representation of a satellites constellation	00:00:02
00:16:42	Use of EGNOS to provide guidance to a visually-impaired person (6 shots)	00:00:50
00:17:32	3D representation of EGNOS being used for personal navigation (11 shots)	00:00:48
00:18:20	4.USE OF EGNOS IN AGRICULTUREEGNOS helps to improve crop management, and to monitor compliance to Community rules. It is also used for high precision spraying of fertilizers and pesticides.	00:03:46
00:18:20	Title	00:00:04

00:18:24	Tractor (2 shots)	00:00:12
00:18:36	3D representation of EGNOS being used for high precision spraying of fertilizers and pesticides by tractors (2 shots)	00:00:49
00:19:25	Use of EGNOS receivers installed in tractors (7 shots)	00:00:29
00:19:54	Tractor operating with an EGNOS receiving device installed on the roof (4 shots)	00:00:26
00:20:20	Farmer using EGNOS to steer his tractor (2 shots)	00:00:11
00:20:31	View of a field (2 shots)	00:00:10
00:20:41	EGNOS being used for harvesting plants (6 shots)	00:00:29
00:21:10	Cows in a field (5 shots)	00:00:26
00:21:36	Farmer harvesting grapes	00:00:12
00:21:48	Apple tree	00:00:05
00:21:53	Field viewed from a helicopter	00:00:13
00:22:06	5.USE OF EGNOS FOR MARITIME AFFAIRSThe added value of EGNOS for martiime vessels, is that it develops a new info/guidance systems, with an automatic identification system.	00:02:47
00:22:06	Title	00:00:04
00:22:10	EGNOS being used for the guidance of maritime vessels (7 shots)	00:00:41
00:22:51	Man on a boat, holding an EGNOS receiver (3 shots)	00:00:20
00:23:11	View of a boat (3 shots)	00:00:11
00:23:22	Communication of the problem, and exchange of information and pictures, with the boat rental company using EGNOS (5 shots)	00:00:30
00:23:52	Boat rental company receiving images in real time, finding the exact position of the boat, and providing assistance (4 shots)	00:00:09
00:24:01	3D representation of a ship receiving EGNOS signalsThe GNSS signals are processed by control centres, and the corrections provided by EGNOS, are sent back to the ship (3 ships).	00:00:32
00:24:33	Boat	00:00:07
00:24:40	Copyright	00:00:12

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