

Time code	ESA Node 3 Cupola VNR January 2010 / 16.9 FHA
A-Roll	
10:00:10	GVs Shuttle lift-off) An historical mission into orbit will soon be underway, when the space shuttle Endeavour delivers major new European components to the International Space Station.
10:00:20	(Animations: Node 3 and Cupola in shuttle cargo bay and on ISS) In its cargo bay will be the European Space Agency’s final two habitable modules for the station - a specialized connecting structure called Node 3, and an observation module known as the Cupola. This mission will mark the completion of a major assembly phase in orbit for ESA.
10:00:39	Interview: Simonetta Di Pippo, ESA Director of Human Spaceflight: <i>“The Node 3 Cupola mission is quite an important mission, not only for Europe, not only for ESA and human spaceflight at ESA, but more in general for all the ISS partnership. And the reason is it’s marking the end of the construction phase for the non-Russian part of the space station.”</i>
10:01:02	(GVs Node 3 at Kennedy Space Centre) Node 3 is one of the most complex elements of the International Space Station. As one of three pressurised connecting modules, it’ll allow other hardware to attach to the station, and accommodate its existing life support equipment.
10:01:18	Interview: Philippe Deloo, ESA’s Project Manager for the Nodes and Cupola: <i>“What is important about Node 3 is that it will provide additional ports to the station. Having additional ports will give more flexibility in the exploitation and the operation of the station, for visiting vehicles or to move pressurised elements around as needed in the future. The second thing is the Node 3 provides location to accommodate life support equipment. Currently this life support equipment is spread all over the other modules of the station, and occupying space that should be used by scientific equipment.”</i>
10:01:58	(Animation: Node 3, GV interior Node 3 at Kennedy Space Centre) Node 3 has also been designed to perform sophisticated life support and environmental control functions for the six astronauts onboard, and provide them with exercise facilities.
10:02:11	Interview: Philippe Deloo, ESA’s Project Manager for the Nodes and

	<p>Cupola: <i>“Node 3 is very complex. It incorporates a rack to generate oxygen, another one to remove the CO2 from the cabin atmosphere, then two other racks to process the water and collect the waste water and convert it into potable water, then it incorporates the bathroom of the astronauts for the crew hygiene, and then two exercising equipments – a treadmill and a resistive device which is a kind of weightlifting machine. In addition to that Node 3 has to provide the services to all the modules that can be potentially attached to it, in terms of ventilation, in terms of water cooling, data, power, etc.”</i></p>
10:02:59	<p>(Animations: the Cupola) The Cupola is an observation and control tower which will be attached to the earth-facing port of Node 3. About 2 metres in diameter, it bears six trapezoid side windows and a circular glass roof. Providing breathtaking panoramic views of planet earth and the universe, the Cupola will bring enormous psychological benefits to astronauts working onboard the station. It’ll also greatly improve the potential for earth observation research and provide robotic arm control functions.</p>
10:03:35	<p>Interview: Simonetta Di Pippo, ESA Director of Human Spaceflight: <i>“The Cupola module will bring a lot to the space station because it’s a sort of dome-shaped module – pressurized module – full of windows, so it will help a lot astronauts to look outside to follow spacewalks, and also to increase the number of earth observation related experiments.”</i></p>
10:03:59	<p>(GVs the Cupola at Kennedy Space Centre) Along with Node 3, the Cupola is a shining example of the capabilities of Europe’s strong, specialised industrial base - which has now developed and built over a third of the pressurised elements for the International Space Station.</p>
10:04:15	<p>Interview: Philippe Deloo, ESA’s Project Manager for the Nodes and Cupola: <i>“The Cupola structure was made out of a single forging in aluminium, which was pretty thick – 20cm thick – this was quite an achievement, this was a premiere in Europe, and this is something Europe should be very proud of. Other high technological items are the windows... first from the glass which is a high optical quality, but also from the window construction that incorporates the four glass panes for various integrity and safety reasons. The final technological challenge was the leak tightness of the elements – Cupola with the seven windows is full of holes and big interfaces...and achieving a good leak tightness...of the element was</i></p>

	<i>not an easy task.”</i>
10:05:07	(GVs the Cupola and Node 3 at Kennedy Space Centre) The prime contractor for construction of both Node 3 and the Cupola was the company Thales Alenia Space Italy. Both modules have been built and developed as part of a barter agreement with NASA – and are provided in return for the transport of hardware and experiments between Earth and the space station.
	Once the construction phase marked by this mission has been completed, Europe’s scientific and technological utilisation of the International Space Station will step up a notch. The benefits for science and industry on earth will be substantial.
10:05:42	Interview: Simonetta Di Pippo, ESA Director of Human Spaceflight: <i>“We want to use now the ISS not only for the standard microgravity disciplines, scientific disciplines, but also for other fields like climate change which is quite important, and in the next coming weeks I would like also to issue another call for proposals for using the ISS for exploration purposes, so preparing for exploration and using the ISS as a test-bed for exploration.”</i>
10:06:09	(the International Space Station) By paving the way to the completion of the International Space Station, the Cupola and Node 3 mission will mark a new era of international cooperation, scientific achievement, and exploration of our solar system.
10:06:26	End of A-Roll
B-roll	
10:06:36	Interview: Simonetta Di Pippo, ESA Director of Human Spaceflight
10:07:58	Interview: Philippe Deloo, ESA’s Project Manager for the Nodes and Cupola
10:10:31	Animations: The Cupola and Node 3
10:14:14	Exterior shot Kennedy Space Centre sign (4.3)
10:14:18	GVs the Cupola at Kennedy Space Centre (4.3)
10:14:28	GVs Node 3 at Kennedy Space Centre
10:14:42	End of B-Roll