The ITER company (Energie Industrie Services) has won the competition organized on the ITER stand at the last International Trade Fair in Marseille (September/October 2010). New to the ITER site is a four-seater plane on 24th April. Accompanied by his father and his sister, Daniel, twelve and a half, experienced his first ever take-off! The flight instructor handed me the flight controls in the air and it was great to discover the Serre-Ponçon and the Serre-Durance from up in the sky. I also saw the ITER site and buildings when we flew over Vence-sur-Verdon,” he said. I was already thinking about working in the aeronautical field and this opportunity has helped me realize that there are numerous possibilities in the private sector too.” Daniel is now patiently waiting for his thirteenth birthday to start his first flying lessons and he may even start “getting some qualifications”.

Local News
Creation of the GIP ITER-Val de Durance
Seven months after it was initially suggested by the Minister Michel Mercier in Cadarache on 7th October 2010, the GIP ITER-Val de Durance officially opened for a period of two years by a ministerial decree on 28th May 2011. According to the text published in the official journal dated on 28th May 2011, the local governing bodies will create a development scheme within an area encompassing from Gap (Hautes-Alpes) to Cavaillon (Vaucluse) following the Val de Durance from Aix-en-Provence to Vaison. Within two years, it must provide the establishment of a route for the development of honourable projects which can be proposed as part of the “State Region and European contract programmes.” It has thirty members, of which ten are founding members. The State is represented by the Provence-Alpes-Côte d’Azur (PACA) Regional Council, the eight local authorities partially financing the ITER construction (RNCA Regional Council, six county councils and the Pays du Colorado) and the CEA. The thirteen local members are as follows: officers (members of the local authority council, regional natural parks, Vallée de la Durance development association) and eight members are ex-officio partners including ITER Organisation and the European Agency Fusion for Energy. The GIP team will be located in offices provided by the CEA at Cadarache CNR (Saint-Paul-lez-Durance) and the Bât 521 in the AXS building.

MEPs Visit Cadarache
A delegation of twelve members of the European Parliament, alternated meetings in Aix-en-Provence and on the ITER construction site on the 16th and 17th May 2011. Their visit ended with positive conclusions on 18th May.

The visit, organized in May by the members of the budget and budget control committees of the European Parliament, was destined by the two delegation heads, Anne Jensen (Danish, liberal party) and Bert Swaak (Dutch, Green party) to have been very successful. During the opening meeting on the 16th May, Anne Jensen praised the twelve deputies of the delegation and the three deputies invited to participate in the meetings. (Nicolas Schiavo, José-Luis Bernabé and Werner Kaiser) of the objective of visit: to present a precise view of the costs, technical modifications and difficulties met by the ITER project which could influence the start, medium or long-term budget demands. “These meetings allowed the European Deputies to question the project representatives about the reliability of the cost estimations presented and to insist on the need for extremely rigorous budgeting”. In addition, Daniel Allard, Member of Parliament, talked of the importance of working the project through to completion. ITER is an incredible opportunity in terms of international influence in research, innovation and employment.

The European Deputies must now write their visit report before the next assembly of European Parliament which will give a ruling in November on the reasons to be used to find the necessary financing.
The components for the heart of ITER will travel across the world by sea before being transported by road to the ITER construction site at Cadarache. Test convoys will be organised before the end of the year in preparation for the transportation of these exceptionally large sized components.

In a year and a half, the first big components of the ITER machine are due to arrive at Berre port which has been pre-empted to enable it to receive them. They will be arriving from China, the United States, Europe, Russia, India, Japan and the Korean Republic and will then need to travel the remaining 104 km to the ITER site. The arrival date of each component is programmed according to the assembly schedule of the ITER tokamak, explains Olivier Guérin, Manager of the ITER Organization’s logistics department. The first convoys will transport the components of the lower levels of the ITER machine building. They will come from the United States and will include the big six metre diameter and ten metre long tanks which weigh 35 tonnes and will be installed during construction of the building.

The next main delivery will be of the electric transformers, arriving from the United States and China from the end of 2012. There will be several dozen transformers, those of which will weigh approximately 200 tonnes.

At the same time, the first components of the crystal should arrive, this large rectangular steel structure will enclose and contain all the ITER machine. The first parts of this chamber, which can make 10% of the total, will be assembled and welded in a temporary building reserved for this purpose. Its installation will progress as the tokamak is assembled. It will be the last element to be completed as the dome will close the entire machine,” adds Olivier Guérin.

It will create a thirty metre high spire, with a modular diameter and weighing approximately 400 tonnes.

Then the assembly equipment will arrive from South Korea. It will provide the work teams with the mechanical means to support and assemble the unusually big and heavy components.

The nine sections of the ITER tokamak Vacuum Vessel will arrive between 2013 and 2014. Once assembled, this steel vessel shaped like a hollow ring (a toroidal chamber) will be perfectly hermetic. During the experiments this chamber will contain the plasma – a hot ionised gas – in which the fusion reactions will be produced. The plasma will be confined by a strong magnetic field produced by large super-conductive magnets which will generate a magnetic field of about 5 tesla.

The tokamak will be powered by a large electric current which will be induced in the plasma. The current will be generated by high-voltage direct current power supplies to be assembled around each section of the tokamak. The current will be produced using large super-conductive cables. They will be used to transport the electricity from the power stations which will be linked to the ITER site to the tokamak.

Two types of cables are being delivered to the ITER site: the first will be used to transport the electricity from the external grid to the power stations. The second will be used to transport the electricity from the power stations to the tokamak. The first will be buried in a 50 km long tunnel along the coast of the French Mediterranean. The second will be installed underground between the ITER site and the power stations.

The second type of cable is destined to transport the electricity from the power stations to the tokamak. These cables will be assembled from a device specifically designed for this purpose, the Large Diameter Assembly System (LDAS). This system will allow the assembly of super-conductive cables weighing 15 tonnes in less than one month. The LDAS will be installed near the ITER site in a temporary building reserved for this purpose.

The cable assembly will be split into four sections of approximately 150 metres each. It will then be moved inside the ITER site using a specially designed cable car. The cable car will be used to transport the cable sections between the temporary building and the tokamak. The cable will then be assembled using a special ‘spooling’ system. This system will allow the sections to be spooled separately into the tokamak.

Finally, another super-conductive magnet made of niobium and Ti [Nb3Sn] will be delivered at the end of 2013. This cylindrical super-conductor will be cut into the centre of the ring created by the vacuum vessel and will be made up of six modules of which each section will have been spooled separately.

Biodiversity: Public Meeting in Rières

On 15th May 2011, nearly 160 inhabitants of the Rivière attended the presentation of the compensatory measures undertaken by CEA (Agence Iter France) in accordance with the local government decree of the 3rd of March 2008.

This public meeting gave the audience the opportunity to discuss the merits of land acquisitions in Ribiers and compensation measures with Jérôme Pavella, Director of Agence Iter France.

The local government decree states that additional natural land must be conserved for compensation for the land clearance operations undertaken on the ITER construction site in accordance with the commitments made by France as host to the ITER project in Cadarache.