ALMA News

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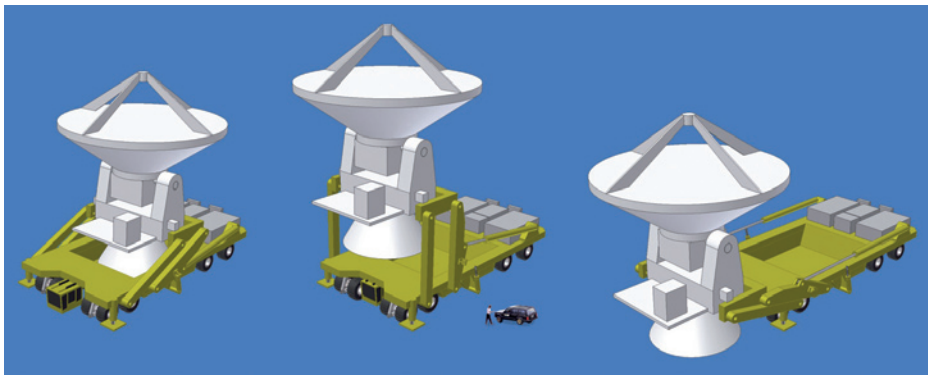
In the last issue of The Messenger, there was an article about the signing at ESO of the European part of the ALMA antenna contract. Shortly after this, the contract for the antenna transporters was signed. A short description of the transporters and the contract is given below.



An ALMA transporter in action (artist's view).

Antenna transporters

One of the unique features of ALMA is the possibility to move the radio telescopes to well-defined positions around the high-altitude plateau of Chajnantor and to transport antennas from the Operations Support Facility to the observing site. In order to do this, specially designed transporters, meeting all environmental conditions at an altitude of 5 000 metres, need to be designed and manufactured, and delivered to the Atacama desert. ESO has signed a contract with Scheuerle Fahrzeugfabrik GmbH, a world-leader in the design and production of custom-built heavy-duty vehicles, for two antenna transporters.

Given their important functions, the vehicles must satisfy very demanding operational requirements. Each transporter has a mass of 150 tonnes and is able to lift and transport antennas of 110 tonnes. They must be able to place the antennas on the docking pads with millimetre precision. At the same time, they must be powerful enough to climb 2 000 m reliably and safely with their heavy and valuable load, putting extraordinary demands on the 500 kW diesel engines. This means negotiating a 28-km-long high-altitude road with an average slope of 7 %. Finally, as they will be operated at an altitude with significantly reduced oxygen levels, a range of redundant safety devices protect both personnel and equipment from possible mishaps or accidents.

The first transporter is scheduled to be delivered in the summer of 2007 to match the delivery of the first antennas to Chajnantor.

News from the ALMA site

Work progresses on the Operations Support Facility (OSF), at an elevation of 3 km. The road connecting the OSF with the Array Operations Site (AOS) is nearly completed. The antennas will be delivered to the OSF. After testing and acceptance, these will be transported on the road to the AOS, where the antennas will be incorporated into the array.

Photos: J. Riquelme, AUI/NRAO (2)

The state of progress (end of March 2006) on the AOS Technical Building at an altitude of 5 km.