



## Universidad de La Plata

Students break new ground with ENOVIA V6

UNLP's Faculty of Engineering and Aeronautics Department virtual wing has been transformed into a real PLM Center equipped with DS PLM solutions such as ENOVIA V6, CATIA, D4MOLA and Abaqus FEA from SIMULIA. The Center is a live laboratory where our students can sharpen their software skills as they prepare to enter the marketplace.



**Alejandro J. Patanella**  
*Executive Director  
Aeronautics Department  
Faculty of Engineering  
UNLP*

### Challenge

The Faculty of Engineering and the Aeronautics Department of National University of La Plata, one of the leading and most prestigious educational institutions in Argentina, wanted to ensure that its engineering faculty graduates met all software professional requirements upon graduation.

### Solution

Partnering with Dassault Systèmes, the Faculty of Engineering and the Aeronautics Department of UNLP offer students the chance to be part of worldclass projects by equipping the university's state-of-the-art PLM Center with the latest DS PLM software solutions.

### Benefits

Dassault Systèmes solutions at UNLP help train a new generation of engineering professionals responsible for the design, testing and maintenance of new products and services ranging from new space satellite applications to alternate green sources of energy.



## Projects of economic and social value

AQUARIUS - SAC-D is a satellite mission that uses scientific applications that will help predict climatic changes accurately. It is the result of an international partnership between the National Aeronautics and Space Administration (NASA); Goddard Space Flight Center (GSFC); Jet Propulsion Center (JPL) and Argentina's National Commission for Space Activities, known by its Spanish acronym of CONAE or Comisión Nacional de Actividades Espaciales.

Argentina's prestigious Universidad de la Plata and CONAE used Dassault Systèmes technology to design, develop, test and manage two of the seven major instruments constituting the SAC-D Aquarius project: a microwave radiometer (MWR) to help measure elements such as wind speed and ice concentrations, and an infrared camera (NIRST), new technology that will help identify hot spot activities such as fires and volcanoes. Additionally, CONAE and UNLP were in charge of mechanical testing and validation of most of instruments outside SAC D platform.

This is the first time NASA has outsourced scientific components to third parties such as CONAE with UNLP participation, two institutions with internationally recognized reputations. Additionally, Argentina's close proximity to the South Pole is also a major advantage in tracking global polar activity in a short period of time.

"UNLP's Faculty of Engineering and Aeronautics Department virtual wing has been transformed into a real PLM Center equipped with PLM solutions such as ENOVIA V6, CATIA, D4MOLA and Abaqus," said Dr. Ing. Alejandro J. Patanella, Director, UNLP School of Engineering, Aeronautics Department. "Created in 2008, the Center is a live laboratory where our students can sharpen their software skills as they prepare to enter the marketplace."

Students and researchers working on Project SAC-D used ENOVIA V6 for live collaboration and program management; CATIA PLM Express for the design of multiple structure modules; and SIMULIA for satellite structural calculations. The solution helped simplify the complex tasks involved in conducting multiple version reviews, tracking and approving design, document, and drawings changes.

Project SAC-D's product and design objectives were successfully met by ensuring consistent



workflow processes to track information, documentation, and requirements needed throughout the project in a secured platform. Other contributing success factors included the protection of intellectual property and access control to all design work, as well the implementation of a business process management system for the capture and re-use of knowledge to ensure process unification and standardization. Information on the mission can be found at [www.conae.gov.ar](http://www.conae.gov.ar)

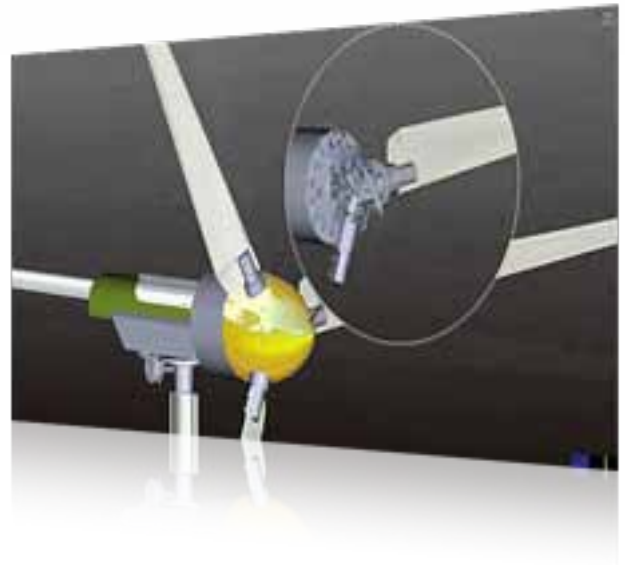
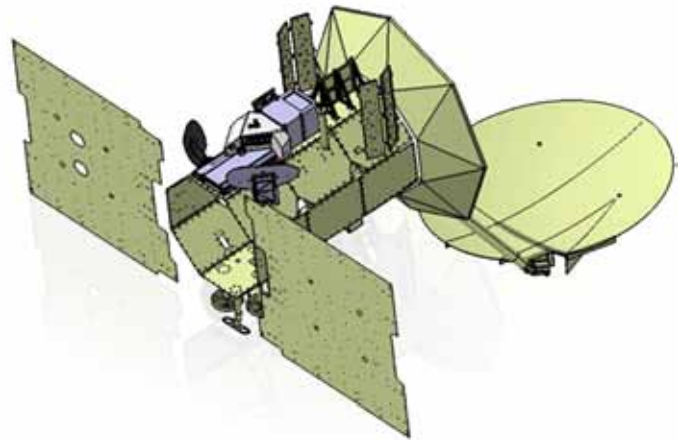
### Alternative energy sources

With the goal of creating affordable and green sources of energy, students also used CATIA and realistic simulation solutions from SIMULIA to design and test a medium-power wind mill to produce electricity for use in remote areas in Argentina. With the use of these advanced 3D PLM technologies, UNLP students designed a windmill and generator in a cost-efficient way, something that would have been quite difficult and expensive using traditional design tools.

Manufacturing costs were minimized by reducing the number of physical prototypes made, since both development and validation processes were carried out on virtual models.

The windmill and generator will be able to supply schools and small communities, far removed from the commercial electric grid, with a source of green and affordable electric energy. Its main advantages are its low cost and easy maintenance. The generator is near completion and currently being tested and will be in use by end of year.

 CATIA  ENOVIA  SIMULIA



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