Press release

Announcing the Winners of the 2nd edition of the NANOSTAR Preliminary Design Challenge

> We are excited to announce the winners of the second edition of the NANOSTAR Preliminary Design Challenge: **UC3M StarWorms from Universidad Carlos III de Madrid, UC3M (Spain).**

January 29, 2020

In this second edition of the Nanostar Preliminary Design Challenge, thirteen multidisciplinary teams of students from the NANOSTAR universities have predesigned a nanosatellite space mission, whose goal is to verify the survivability in space of a marine photosymbiotic species of worms (Roscoff worms), which may one day play an essential role in the creation of artificial ecosystems for deep space exploration missions. The scientific payload of the nanosatellite will monitor the metabolism of the worms and their efficiency for air recycling via video observations and measurements.

The total number of registered students has been 82 students (13 teams), although only six teams have managed to deliver the requested work (a design file, a preliminary design report and an oral video presentation) within the competition deadline (January 6th).

The Evaluation Committee, composed of members from all NANOSTAR institutions, thus specially congratulate these teams (**Team Bernoulli**, **nanoMUSE**, **UPM StarWorms**, **Wormonauts**, **UC3M StarWorms** and **WOSS**) for meeting such a strict deadline and for the great quality of the presented work. The evaluation has been made based on the criteria published at the website https://nanostarproject.eu/student-challenges/registration-predesign-challenge-second-edition/, which are:

- Compliancy with the top-level requirements of the mission
- Project consistency and physical soundness
- Risk analysis
- Mission performance
- Solution innovativeness
- Document quality
- Presentation quality
- Team management, communication and organization
- Correct usage of NANOSTAR resources, tools, and methodology
- Multidisciplinarity, gender balance, inter-institutionality and use of Nanostar communication tool

FIRST PRIZE. Best Team Ranking Top 3:

1. **UC3M StarWorms** from Universidad Carlos III de Madrid, UC3M (Spain): Álvaro Sanz Casado (team leader), Carlos Álvaro Arroyo Parejo, Miguel Renieblas Ariño, Sergio Sarasola, Miguel Muñoz Lorente.

2. **UPM StarWorms** from Universidad Politécnica de Madrid, UPM (Spain): Gema Aparicio Cantalapiedra (team leader), César Díez Factor, Jonathan Martín Palomo, Fernando Ayape Alonso.

3. **nanoMUSE** from Universidad Politécnica de Madrid, UPM (Spain): Inés Vargas (team leader), David Moreno, Manuel Soto-Aranaz González, Alberto Rodríguez Pérez-Silva, Jaume Fortaleza Llorens.

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Best predesign document:

UC3M StarWorms from Universidad Carlos III de Madrid, UC3M (Spain): Álvaro Sanz Casado (team leader), Carlos Álvaro Arroyo Parejo, Miguel Renieblas Ariño, Sergio Sarasola, Miguel Muñoz Lorente.

Most innovative mission:

nanoMUSE from Universidad Politécnica de Madrid, UPM (Spain): Inés Vargas (team leader), David Moreno, Manuel Soto-Aranaz González, Alberto Rodríguez Pérez-Silva, Jaume Fortaleza Llorens.

Best management practices:

UPM StarWorms from Universidad Politécnica de Madrid, UPM (Spain): Gema Aparicio Cantalapiedra (team leader), César Díez Factor, Jonathan Martín Palomo, Fernando Ayape Alonso.

Best oral presentation:

Team Bernoulli from Universidad Politécnica de Madrid, UPM (Spain): Tomás Girona Gutiérrez (team leader), Gonzalo Azaña Caro, Daniel Gómez de Antonio, Néstor Martínez Ribera, José Luis Ramírez

All six teams that have submitted their work shall receive an **official participation diploma**. Additional diplomas shall be awarded to the teams that have won a special prize. The first prize team (UC3M StarWorms) shall be awarded both a laptop/person and the possibility to participate to the international nanosatellites conference **4S Symposium 2020 (Small Satellites Systems and Services)** https://atpi.eventsair.com/QuickEventWebsitePortal/4s2020/4s where they can present their mission design. This possibility shall be confirmed in the month of February.

Once again, the Nanostar evaluation committee wishes to thank all participating teams for their effort and for the great quality of the submitted work

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NANOSTAR project

The nanosatellite standard is today used by many universities and companies to attract the best students and engineers, that supports the universities and industries competitiveness.

Several countries from the north of Europe have strongly invested in this approach, creating a commercial offer that has become very well positioned in the market. However, Southern Europe, despite its strong influence in the space sector, has only 14% of the projects in the European nanosatellite sector and no company created in this field.

NANOSTAR is a European project to support the training and development of student nanosatellites in the south west of Europe.

NANOSTAR project is funded by the Interreg Sudoe Programme through the European Regional Development Fund (ERDF). The project has a total budget of 2 million euros.

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The consortium is composed of 2 aerospace clusters, 7 universities plus 3 ESA-BIC centres as associates, in France, Spain and Portugal:

- Aerospace Valley (Project coordinator) www.aerospace-valley.com
- Madrid Aerospace Cluster www.madridaerospace.es
- Institut Polytechnique de Bordeaux www.bordeaux-inp.fr
- Institut Supérieur de l'Aéronautique et de l'Espace www.isae-supaero.fr
- Université de Montpellier www.umontpellier.fr
- Universidad Politécnica de Madrid www.upm.es
- Universidad Carlos III de Madrid UC3M www.uc3m.es
- Universidade da Beira Interior UBI www.ubi.pt
- Instituto Superior Técnico http://tecnico.ulisboa.pt

Associates:

- ESA BIC Sud France
- Instituto Pedro Nunes - Associação para a Inovação e Desenvolvimento em Ciência e Tecnologia www.ipn.pt
- Fundación para el Conocimiento madrimasd en su función de ESA BIC España www.madrimasd.org

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