

EDITORIAL

Staying on track, despite COVID

*"In every crisis, there are
always positive points."*

Comat shows great collective resilience.

As soon as the beginning of the first lockdown, the company took full measure of the threat and immediately set up health protocols to work with maximum safety, thanks to a working organisation adapted to social distancing.

This crisis revealed one of our company's strong points: its collective mindset. As they are used to developing and successfully achieving complex projects, our teams have joined forces and learnt how to work differently, still efficiently.

Comat spares no effort to get prospects for the future.

During this period, our customers have once again showed their confidence by entrusting us with new projects, such as the Alpha mission (Thomas Pesquet's next flight), with 7 experiments assigned to Comat, plus SESAME and DECLIC equipment. In the telecom area, our partnership with AIRBUS results in the provision of various ONESAT equipment. We also won the UHF antennas of the Kineis constellation. Let us as well mention R&D contracts won this year (H2020, PIA, R&T CNES) in order to strengthen our own products (reaction wheels, PJP thruster, diphasic pump, deployable structures...).

In these challenging times, Comat has fully understood that the crisis was bringing out new needs:

- › Providing sovereign equipment to secure our independence;
- › Taking part in the re-industrialisation of our country to create and relocate new jobs;
- › Protecting our national assets with the French Defence Procurement Agency and the Space Command who are settling in Toulouse.

Thus, our teams are powerfully deploying the company's strengths in order to keep enhancing our position as space equipment supplier.

Comat has even further strengthened, with the arrival of new talents. A warm welcome to them.

Comat stays on track. We have therefore every reason to be confident in our future.



Benoît MOULAS
Comat's Chairman

Launch of the Promethee constellation

Promethee, the latest NewSpace French start-up, closes its first funding round and launches the development of an innovative offer of sovereign Earth Observation services.

As a major space equipment supplier, Comat decided to take an active part in this ambitious project by contributing to this funding round. Comat's President Benoît Moulas states that "Promethee is the French NewSpace for Earth Observation applications".



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Science and Exploration

Lunar Dust Removal

Within the scope of future returns to the Moon, ESA is investigating how to remove Lunar dust, because of its abrasiveness and toxicity. The Agency selected Comat to lead a collaborative project with ONERA, which aims at assessing the feasibility of removing Lunar or Martian dust (especially from optical elements), thanks to electrodynamic methods.

Space

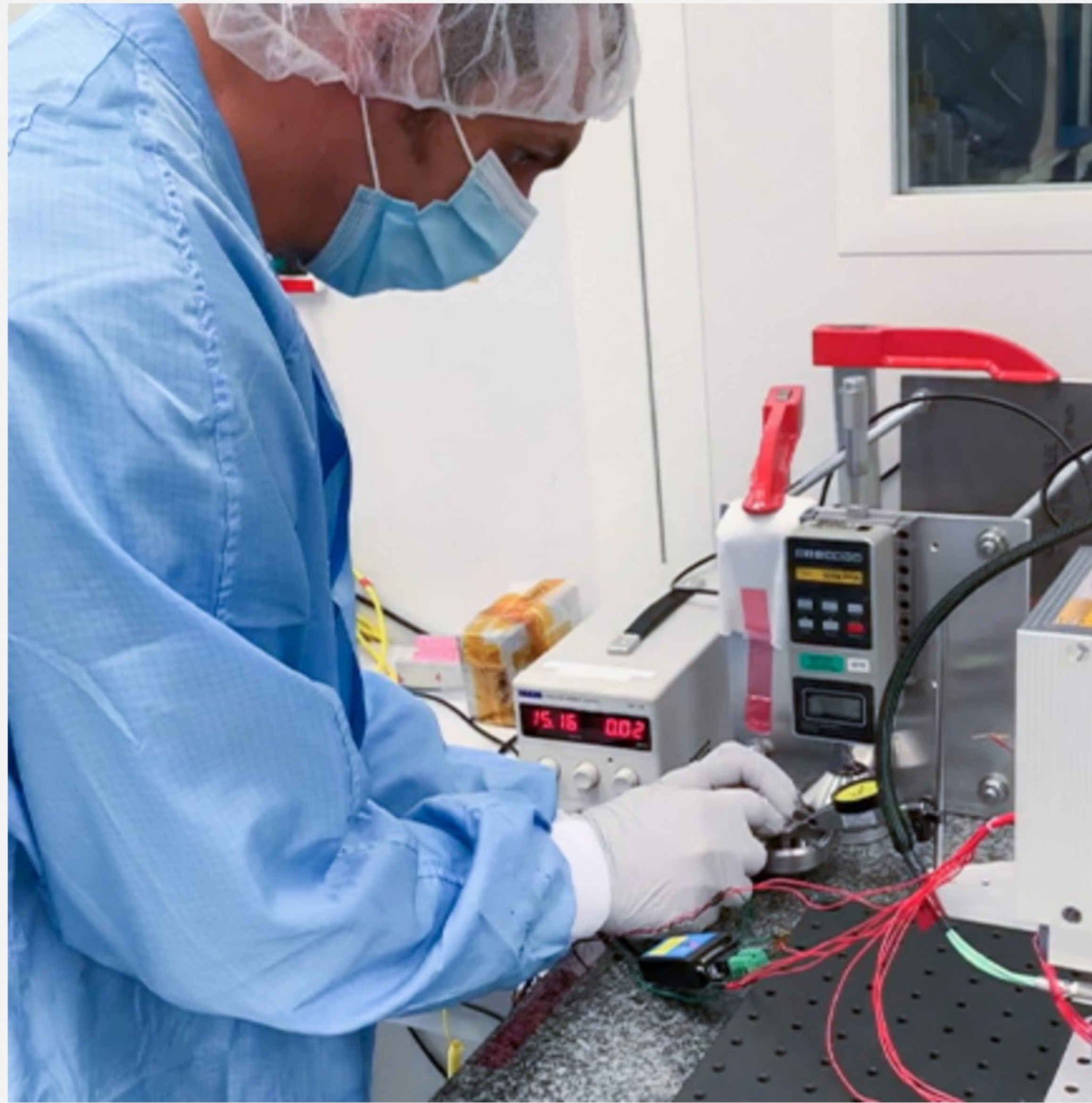
Catching up on IASI



The first IASI-NG scan flight model has just completed a series of commissioning tests, including:

- › **A first series of performance tests**, in particular in nominal operating conditions, such as it will be used in orbit.
- › **Mechanical tests including sine and random biases**, to check that the mechanism is able to bear the vibrations generated by the launch vehicle, without any degradation.
- › **Thermal tests, including a non-operational cycle and three hot and cold operational cycles**, to check that the mechanism is able to bear such thermal variations, and that, under such maximum temperatures, performances still comply with needs.
- › **A second series of performance tests**, to check that environments did not degrade performances.

All the performances measured having proved to be compliant with qualifications, the model will be delivered to Airbus DS in November 2020. It will be integrated into the IASI-NG instrument, which in turn will be taken onboard the METOP-SG satellite.



Smallsats: the RW40 wheel product

Reaction wheel: 1st Comat smallsat product

The wheel is spinning

The development and industrialisation of the reaction wheel have gone several (major) steps further. This equipment has a great future ahead, as it allows a precise control of nano and small satellite attitude. It will become one of Comat's core products, as the company forecasts a minimum yearly production of 100+ wheels, for the global market.

This electromechanical equipment alone encompasses most of space technologies: mechanics, heat science, mechanisms, electronics, automation and computer science. This small product of 200 grammes therefore involves a full range of engineering skills. This is why few space equipment suppliers have embarked on this area: it remains a highly sensitive equipment that requires a perfect control of quality level and industrial process.

Comat first developed several prototypes in order to explore the whole potential of the design selected. Then, these prototypes successfully passed life-duration, vibration, shock and thermal tests. Now, Comat is well into the industrialisation stage. This phase is essential to **produce 100+ units per year with controlled cost and quality**. Previous key stages have already been completed: selection of subcontractors, first definition of industrial file, definition file, validation file, circuit board, EEE...



Gérard Muller
Comat Consultant

Quality

EN9100 certification

Comat's certification successfully renewed!

Comat successfully passed its certification audit at the beginning of October. The results of this 2020 audit are substantially positive and highlight many strong points (14!), as emphasised by the AFNOR auditor.



FOCUS

New hires



Flavien Deschaux

Doctor of software and electronic architecture

Flavien did a PhD thesis both at the French Space Agency (CNES) and CSTM, who wanted to develop an electronically-controlled pressure regulator. Flavien completed an R&D project until obtaining a functional prototype and submitting a patent (pending).

"After my PhD thesis, I looked for a job as an electronic/automotive engineer with a major R&D component. CSTM recommended Comat, considering the interest of their projects. When I wanted to send a speculative application on the Comat website, I saw a job offer that was just what I was looking for, and for which I had the corresponding profile. I just seized the opportunity and applied... Sometimes, you must believe in your stars... and above all try your luck!"



Pierre Guillemot-Simon

Mechanism engineer

Pierre is graduated from Supaéro; he did his internships at AIRBUS DS and CNES, as a mechanism engineer.

"It was therefore quite natural that I should try to find a job in the field of mechanisms. I knew Comat since I had worked on 3POD during my internship at CNES, and because Comat is also a preferred partner to Airbus DS. I am much attracted by the dynamic and innovative qualities that are rather found in small structures such as Comat. From talking with my former colleagues, I heard about job opportunities within Comat's Mechanism Team."



6 chemin de Vignalis, 31130 Flourens, FRANCE

+33 (0)5 61 24 26 16

www.comat-agera.com