

ESO and Inria Chile signed an agreement to develop joint operations of VLT and ELT, two of the world's largest telescopes.

On May 16, ESO and the [French Institute for Research in Digital Sciences in Chile \(Inria Chile\)](#) signed a Memorandum of Understanding to facilitate collaboration between both institutions in projects of digital transformation at [ESO's Paranal Observatory](#).

The Memorandum was signed by Luis Chavarría, ESO's representative in Chile, and Nayat Sánchez-Pi, Inria Chile's director, at the Paranal Observatory together with a delegation from the institute, in which Gonzalo Arenas, head of International Relations of the Ministry of Science, Technology, Knowledge and Innovation of Chile, also participated, representing that ministry. They toured different telescopes and observed the work of the observatory's control room.

ESO operates the [Very Large Telescope \(VLT\)](#) at the Paranal Observatory, the world's most advanced visible-light telescope, and, at the end of this decade, it will put into operation the [Extremely Large Telescope \(ELT\)](#), the largest visible and near-infrared telescope in the world, currently under construction on Cerro Armazones. The integration of the ELT into the operations of the Paranal Observatory poses great challenges and demands constant improvements.

"The ESO's ELT will be the largest optical telescope in the world, which will represent a considerable challenge. Our goal is to fully integrate it into the daily operations of Paranal. This collaboration agreement will allow us to explore the best way to achieve this and take advantage of Inria's experience in large observatories, such as ALMA, of which we are also part" said Luis Chavarría, after the signing of the agreement.

"This alliance with ESO for the operations of the ELT and the VLT fills us with enthusiasm and pride, as it will allow us to push the frontier of scientific and technological knowledge in digital sciences in a key sector for Chile such as Astronomy," said Inria Chile Director, Nayat Sánchez-Pi. *"Our vast experience in digital sciences, artificial intelligence, and data analysis, combined with our track record of working with astronomical observatories, will be key to the development of innovative digital solutions that will optimize the operations of the Paranal Observatory"*, she added

"We are very excited to partner with Inria to develop the future operations model for our Paranal Observatory with the VLT and ELT. Inria's vast experience in this area is crucial to our ambitious plans to operate the world's largest ground-based observatory in an efficient, effective, and sustainable manner", said Andreas Kaufer, ESO's director of operations, who attended the ceremony remotely via teleconference.

Inria Chile is the first and only center of the French Institute for Research in Digital Sciences and Technologies located outside of France, a public institution that, among other things, coordinates the research component of the French National Strategy in Artificial Intelligence. Inria Chile was established in 2012 and has the support of the National Agency for Research and Development, ANID. The institute also has a long experience working with astronomical observatories located in Chile, in particular with the [ALMA Observatory](#), where ESO, together with its international partners, operates the world's largest radiotelescope. This experience has earned it significant recognition within the scientific and technological community, facilitating collaboration from its expertise in digital sciences and technologies with various

institutions dedicated to astronomy to enhance the capacity and infrastructure of advanced telescopes through artificial intelligence techniques, human-computer interaction, and software engineering.

This framework agreement between ESO and Inria Chile represents an important step in scientific and technological collaboration that involves France, Chile, and ESO. This alliance considers four main lines of work:

- the creation of an integrated control system for the VLT and ELT telescopes
- the analysis of large volumes of data for diagnostics and predictive maintenance.
- The development of a reporting, visualization, and analysis tool for key points during telescope operations;
- The creation of an infrastructure for data, models, and experimentation, developing a platform that will host the information generated by the telescopes, as well as artificial intelligence models and experimentation tools.

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