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ESA Terrae Novae Exploration Strategy 2040

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ESA's Exploration Programme, recently renamed "Terrae Novae", encompasses all ESA's human and robotic activities related to the exploration and utilisation of Earth Orbit, Moon and Mars. Its vision is to expand Europe's human presence into the solar system using robotic missions as precursors, with the horizon goal of human Mars exploration; and to do this for science, economic benefits, to promote global cooperation and for inspiration^[1]. In autumn 2020, ESA initiated a two-year long project to define the Terrae Novae long-term strategy, looking to 2030 and beyond. This abstract provides an introduction to the objectives of the project and summarises the progress and results to date.

It is the ultimate goal of the strategy work to provide a lighthouse, to enable a steady orientation and long-term navigation of Europe's decision makers on their voyage beyond the current horizons. The strategy work does not revisit the fundamental goals of ESA's exploration programme as stated above; instead, it is preparing the next decisions in implementation that will have to be taken by ESA Member States at the at the ESA Council meeting at ministerial level in 2022 (CM22). Decisions will be required to maintain long term European capabilities (e.g. in Low Earth Orbit (LEO)) and to prepare the next steps (e.g. for lunar surface exploration and preparations to enable humans to Mars). ESA is already anticipating a significant increase in its request for Exploration Programme funding at CM22.

The Agenda 2025 of the new ESA Director General addresses challenges and objectives for ESA in the next four years, with an outlook to 2035^[2]. Being ambitious is the keyword in this Agenda, in order to position a transformed ESA in an ever more world-wide competitive arena, by "*making space for Europe*".

In a fast evolving international context, the challenging task of the strategy project is to position Europe to realise its exploration ambition in two dimensions.

The presentation will include a status on the strategy development work including the initial results that show options for an integrated exploration roadmap for Europe to 2040. Stakeholder consultation (Member States, Industry, Science Community etc) will continue throughout 2021 into 2022 with refinements of the strategy expected until finalisation and approval by ESA Member States around mid 2022.

[1]http://esamultimedia.esa.int/multimedia/publications/ESA_Space_Exploration_Strategy/offline/download.pdf

[2]Agenda 2025 of the ESA Director General
(https://download.esa.int/docs/ESA_Agenda_2025_final.pdf)