AN UPDATE ON THE EXOMARS 2022 ROVER DATA ARCHIVE

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Introduction: The ExoMars (Exobiology on Mars) programme is a joint programme of the European Space Agency and Roscosmos with a contribution from NASA.

The ExoMars 2022 Rover and Surface Platform (RSP) mission, is due to be launched in September 2022 with Mars arrival and landing in Oxia Planum in June 2023. This mission will carry full scientific payloads on both a landing platform and a rover. The mission will investigate the Mars surface and sub-surface for biological signatures for at least a nominal mission of 211 sols.

ExoMars in the PSA: The ESA Planetary Science Achive (PSA) currently hosts two PDS4 archives comprising ExoMars 2016 data and early mission Bepi Colombo data.

The ExoMars 2022 Surface Platform long term archive is being produced at the Space Research Institute of the Russian Academy of Sciences (IKI), and the Rover long term archive is being produced at the European Space Astronomy Centre (ESAC) in Spain. Both archives will be mirrored and hosted at both centres. At ESAC these data archives will be incorporated into the PSA and data will be served in line with the existing missions through the standard PSA interfaces such as the table view and the image gallery. The data will also be available through the machine access protocols PDAP and EPN-TAP plus FTP, or a similar successor.

The Rover Mission Archive: The Rover mission will be the first mission to produce a large quantity of surface and sub-surface data in contrast to the existing mainly orbital missions within the PSA. Therefore it is planned to expand the PSA capability with several new data views dedicated to the Rover mission. The entry point for an archive user will still be the existing PSA user interfaces (at psa.esa.int), however the Map View landing page, currently serving a choice of a Mars or 67P Comet map, will have an additional option, taking the user to the Rover Traverse view. In a similar way to the Mars Map view, this option will allow a user to view, from above, the Rover Traverse and it takes inspiration from the NASA Analyst's Notebook. This view will be interactive and will allow the archive user to view various overlays giving information about the Rover mission activities at a location or on a given Sol.

An initial Rover Traverse view prototype has been developed and has been integrated with the other parts of the PSA infrastructure. We report here on this ongoing agile development and the plans for its improvement leading up to the landing and surface mission. Critical to this is the Rover data design and in particular the approach which has been adopted to support the different types of Rover targets, from the large scale to the microscopic. The implementation of this target scheme as a separate dictionary and using Product_Ancillary files will also be discussed.

Summary: This presentation will provide an update on the development of the ExoMars 2022 Rover mission archive. The status and plans for the Rover Traverse view development will be discussed along with the data design choices for the mission.