THE EXOMARS ROVER MISSION TO SEARCH FOR SIGNS OF LIFE. J. L. Vago and the ExoMars Project Team (European Space Agency, Noordwijk, the Netherlands, jorge.vago@esa.int).

Establishing whether life ever existed on Mars is one of the outstanding scientific questions of our time. To address this and other important goals, the European Space Agency (ESA) and NASA have agreed to establish a joint programme for the robotic exploration of Mars.

The ESA/NASA Programme includes two major missions:

1. An orbiter, to be launched in 2016, dedicated to the temporal and spatial characterisation of atmospheric trace gases of possible biological importance, such as methane and its degradation products, and including the mapping of their source regions. The orbiter mission will include a European Entry, Descent, and Landing demonstrator and provide data relay services to Mars landed missions up to 2022.

2. A two-rover mission to be launched in 2018: one rover provided by NASA and the other by ESA. ESA’s ExoMars rover will carry a suite of analytical instruments dedicated to exobiology and geochemistry research: the Pasteur payload. The Rover will travel several kilometres, collecting and analysing samples from outcrops and from the subsurface with a drill, down to a depth of 2 m. The very powerful combination of mobility and access to subsurface locations, where organic molecules may be well-preserved from radiation and oxidant damage, is unique to this mission.

This paper will present the latest configuration for the 2018 two-rover mission, concentrating on the ExoMars rover, its instrument payload, and reference surface mission. Upcoming steps for the definition of the joint mission’s science content and landing site selection activities will also be addressed.