Development of Global Navigation Satellite System (GNSS) for Mars

Mission Objectives

1.1. Establishing a GNSS around Mars.

1.2. The GNSS should provide global coverage everywhere on Mars and allow the precise determination of the absolute position of objects on the surface of Mars and flying in the atmosphere at any attitude.

1.3. The GNSS must be low cost but sufficiently accurate and reliable to support future missions on Mars.

Mission Level Requirements

2.1. The GNSS shall be operational by 2035.

2.2. The first satellite cannot be launched before 2029.

2.3. The GNSS shall allow receiving the signal allow receiving the signal of at least 4 satellite at any time and at any point on the surface of Mars.

2.4. The proposed solution should consider minimum number of launches from Earth.

2.5. The GNSS system should operate for at least 10 years without replacement.

2.6. No communications are allowed during major conjunctions with the Sun.