

Committee on the Peaceful Uses of Outer Space

Scientific and Technical Subcommittee

Vienna, 6–17 February 2023

Statement of Italy

Item 9. Recent developments in global navigation satellite systems

Mr. Chair, distinguished Delegates,

Italy recognised since a long time the importance of satellite navigation based on Global Navigation Satellite Systems (GNSS) and related augmentation systems for the betterment of our daily life and the protection of infrastructures and national key interests.

In fact satellite navigation may be beneficial to very diverse types of applications and serve several user communities. Among such communities a primary role is played by governmental entities and economic operators responsible for the operation of essential and critical services.

It is noteworthy that the total market of satellite navigation, which includes revenues both from devices production and shipment and from services rendering, is huge and constantly growing: a total value of around 500 B€ has been forecasted for 2030, representing a very important percentage of the overall predicted “space economy” dimension.

Satellite navigation is a key enabler of a variety of applications which have the potentiality to enhance the citizens’ quality of life, to favour the economic development, the green transition and the safety and security. As a matter of fact, an increased number of critical services are based on satellite navigation, thus the GNSS performance and resilience are key for our society.

Among the applications categories which satellite navigation is enabling today and will even more in the future, let me spell out a non-exhaustive list for which a special attention is paid in Italy for further developments:

- Climate services, tourism and health
- Emergency management
- Environmental and Infrastructure monitoring
- Transport sector (maritime, rail, road and automotive, aviation, aerospace)

- Urban development and cultural heritage

Moreover, Italy is fully involved, since the beginning of the program, in the development and operation of the EU GNSS system Galileo and is pursuing technical development for future systems. I would like to highlight that Galileo is currently showing state of art performance and is offering unique services, like the very recently announced High Accuracy Service.

Satellite Navigation technical and applicative development is mainly pursued by Italy at national level (e.g. by the Italian Space Agency initiatives), in the European Space Agency framework and via the national participation to the EU Navigation Programmes.

With reference to the ESA Navigation optional programme, at the recent ESA Council at Ministerial level in November 2022, Italy has guaranteed the largest participation. The Italian contribution to ESA in Satellite Navigation is, allowing the implementation of a new navigation scientific mission, GENESIS, which will contribute to the enhancement of the International Earth Reference Frame, offering benefits in the field of geodesy and in general to the navigation. GENESIS mission has been very welcomed in the frame of the last ICG (international Committee on GNSS) meeting.

Mr. Chair,

In the short-term, Italy envisages, among others, the following activities in the field of satellite navigation:

- The development of enhanced integrated applications based on satellite navigation, satellite communications and earth observation data exploitation
- The introduction of satellite navigation in the rail domain targeting the increased efficiency and safety, particularly in the local railway network. This is considered a very important innovation for the quality of life of millions of passengers every day.
- Moreover, a field of application with increasing importance in Italy is the automotive and maritime one and, looking at the future, in particular the autonomous mobility supported by satellite-based services is very promising.

Finally, Italy is also pursuing the extension of satellite navigation technologies to the field of planetary exploration, starting with the Moon. For such scope the Italian participation in the ESA Moonlight programme and in the frame of the ARTEMIS programme represents a major, but not unique, example of the use of such technologies beyond Earth orbits. Also at this regard, allow me to inform you that a

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GNSS receiver developed in Italy will be integrated in a moon lander which is planned to arrive to the lunar surface in 2024.

I thank you very much for the attention.