



## Defence Space Sector Fact-Finding Mission

National Assembly

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**Space assets have become the backbone of many technological systems and are therefore essential infrastructures for the smooth functioning of many activities in our society. This is demonstrated by the place taken by GPS, without which financial transactions would no longer be synchronized, by the oriented transport and by many guided weapons. Indeed, armies cannot escape this growing dependence on space assets.**

Like the air environment at the beginning of the 20th century or, more recently, digital networks, space was first used by armies to support operations in other environments. France has thus deployed a credible and efficient set of observation and communications systems, which the new military programming law provides for the renewal of. These military space capabilities have been developed, placed in orbit and exploited all the more efficiently because France has been able to make the most of the duality of space technologies. The defence space sector thus benefits from the recognised excellence of the Centre national des études spatiales, our research organisations - in particular the Office national d'études et de recherches aérospatiales - and our space industry.

But just as the air environment became a military operations environment in its own right during the Great War, and just as cyber defence became a necessity, space is becoming a field of confrontation between powers and, perhaps soon, private actors. The wave of innovation at work in the space sector, often referred to as New Space, has made possible the development of new space assets and made space technologies accessible to a greater number of actors. Thus, the weaponization of space is under way; whether we regret it or not, it is a fact. At the same time, in the general context of a hardening of the balance of power, which is well underlined by the Strategic Review, space is becoming the object of rival ambitions and the locus of increased tensions.

The risks are therefore such that today we must ensure that space does not become the Achilles heel of our armies or our society. It is with this in mind that this report puts

forward proposals for the development of a comprehensive, credible and realistic space defence strategy.

## **MAIN RECOMMENDATIONS OF THE RAPPORTEURS**

### **• DEVELOP AND PUBLISH A SPACE DEFENCE STRATEGY**

- Establish a fully-fledged "space defence" mission, separate from the air defence mission, and assign it to the armed forces.
- Establish an ambitious doctrine for the defence of French interests in space, providing for the possibility of using not only defensive but also counter-offensive means in space

### **• ESTABLISH A CAPABILITY PROGRAMME TO CONSOLIDATE OUR SPACE DEFENCE**

Investing in the renewal of our space surveillance capabilities, in particular by funding :

- the renewal of the GRAVES system with a more efficient and resilient system, including a redundancy system installed in French Guiana
- the modernisation of COSMOS and the establishment, for redundancy purposes, of a second COSMOS in New Caledonia or French Polynesia
- extension and technological improvement of the network of geostationary orbit observation telescopes
- modernisation of the means of characterising satellites in orbit
- Signals intelligence capabilities capable of detecting "dormant" satellites
- Support the European EU-SST programme and link with that project the essential development of sovereign national capabilities
- Acquiring first capabilities for non-kinetic action in space by high intensity lasers, jamming or decoying means, and cybernetic means

Fund demonstrators in the following areas:

- low earth orbit satellite constellations
- maneuvering space vehicles, such as the Space Start, Space Tug and Space Rider
- pseudo-satellites, such as the Stratobus and the Zephyr
- the "reactive" launchers

### **• TO GIVE AN "ORGANIC INCARNATION" TO SPACE DEFENSE...**

- Increase the number of personnel employed by the armed forces in space defence activities by about 200.
- Set up a training and human resources management course specialising in space defence
- Create a "grand command" of space forces at the "four star" level within an air and space army.

- Establish this command as a "single manager of the space environment" and improve its coordination with the relevant CNES services.

- **BACKING SPACE DEFENCE WITH A FIRM INDUSTRIAL AND SCIENTIFIC POLICY**

- Financing an R&T and R&D effort in major fields of dual space technologies, including "deep tech" research.
- Take part in the most ambitious scientific and technological projects, particularly in the field of space conquest.
- Advocate the establishment in European law of a European preference rule for space markets
- Establishing an attractive national legislative framework for companies exploring and exploiting exo-atmospheric natural resources

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