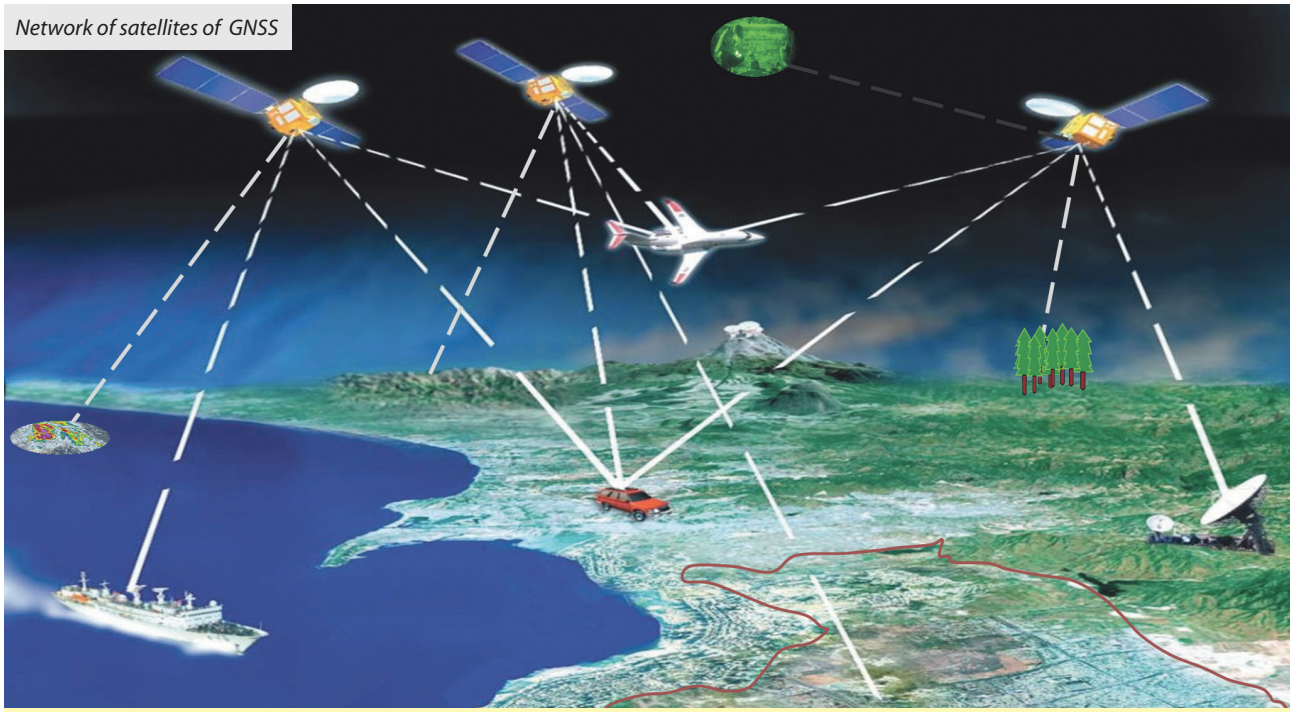
GPS technology

Like the Internet, GPS is an essential element of the **global information infrastructure** and it has led to the development of hundreds of applications affecting every aspect of modern life. GPS technology is now in everything, from major communication networks to banking systems and financial markets which depend greatly on GPS for precise time synchronisation. GPS also improves weather forecasting, earthquake monitoring, environmental protection, public safety. GPS finds applications into mobile phones, cars, boats, planes, construction equipment, laptop computers and tablets.

The *Global Positioning System* (GPS) is a United States-owned utility that provides users with positioning, navigation and timing services. The GPS space segment consists of a **constellation of satellites** transmitting **radio signals** to users. The United States is committed to maintaining the availability of at least 24 operational GPS satellites which fly at an altitude of approximately 20 km. Each satellite circles the Earth twice a day. Since February 2016, there heve been 32 satellites in the GPS constellation, 31 of which are in use. The additional satellites improve the precision of GPS receiver calculations.

GPS uses these "man-made stars" as reference points to calculate positions accurate to just a few metres. In fact, with advanced forms of GPS you can make measurements to closer than a centimetre. The GPS is a part of the larger **GNSS** which stands for *Global Navigation Satellite System*. GNSS is the generic name used to describe any global system of satellites that transmit signals for navigation purposes on Earth and includes also the Russian **GLONASS** and the Chinese **BEIDOU**. The European Union and European Space Agency (ESA) agreed in March 2002 to introduce their own alternative to GPS, called the **Galileo Positioning System** which is scheduled to be fully operational by 2020. Features measured with GNSS can be displayed on maps and in geographic information systems (GIS).

Network of satellites of GNSS



to affect: *coinvolgere, influire su*
to agree: *prendere accordi*
availability: *disponibilità*
committed: *impegnato*
earthquake: *terremoto*
features: *caratteristiche, aspetti*
forecasting: *previsioni*
operational: *operativo*
scheduled: *programmato*
timing services: *servizi di cronometraggio*
utility: *servizio pubblico*

1 Write questions to the following answers.

1. .....
It finds applications in mobile phones, cars, boats, planes, construction equipment, laptop computers and tablets. GPS improves weather forecasting, earthquake monitoring, environmental protection, public safety.

2. .....
The Global Positioning System (GPS) is a United States-owned utility that provides users with positioning, navigation, and timing services.

3. .....
The GPS space segment consists of a constellation of satellites transmitting radio signals to users.

4. .....
Approximately 20 km.

5. .....
As reference points to calculate positions and make calculations.

6. .....
It includes also the Russian GLONASS and the Chinese BEIDOU.

7. .....
It is the European alternative to GPS. It is scheduled to be fully operational by 2020.

8. .....
They can be displayed on maps and in geographic information systems (GIS).

A GPS satellite

Galileo Positioning System