

USING GPS ON A GLOBAL LEVEL

Abstract:

GPS is a technology that represents one of the most important applications of GNSS. The main GNSS systems: GPS (United States of America), Galileo (European Union), GLONASS (Russia), and BeiDou (China) It shows the practical applications of GNSS receivers in many fields: automotive transport, aviation, maritime navigation and industrial activities: transportation, logistics, drones and robotics, precision agriculture, construction, and mining. The study emphasizes the role of GNSS technology in optimizing routes, increasing safety and efficiency, and supporting autonomous driving. It provides detailed information about location helping you to find the place or finish the job faster. GNSS SSV extends services to altitudes between 3,000 and 36,000 km, ensuring the operation of space navigation systems.



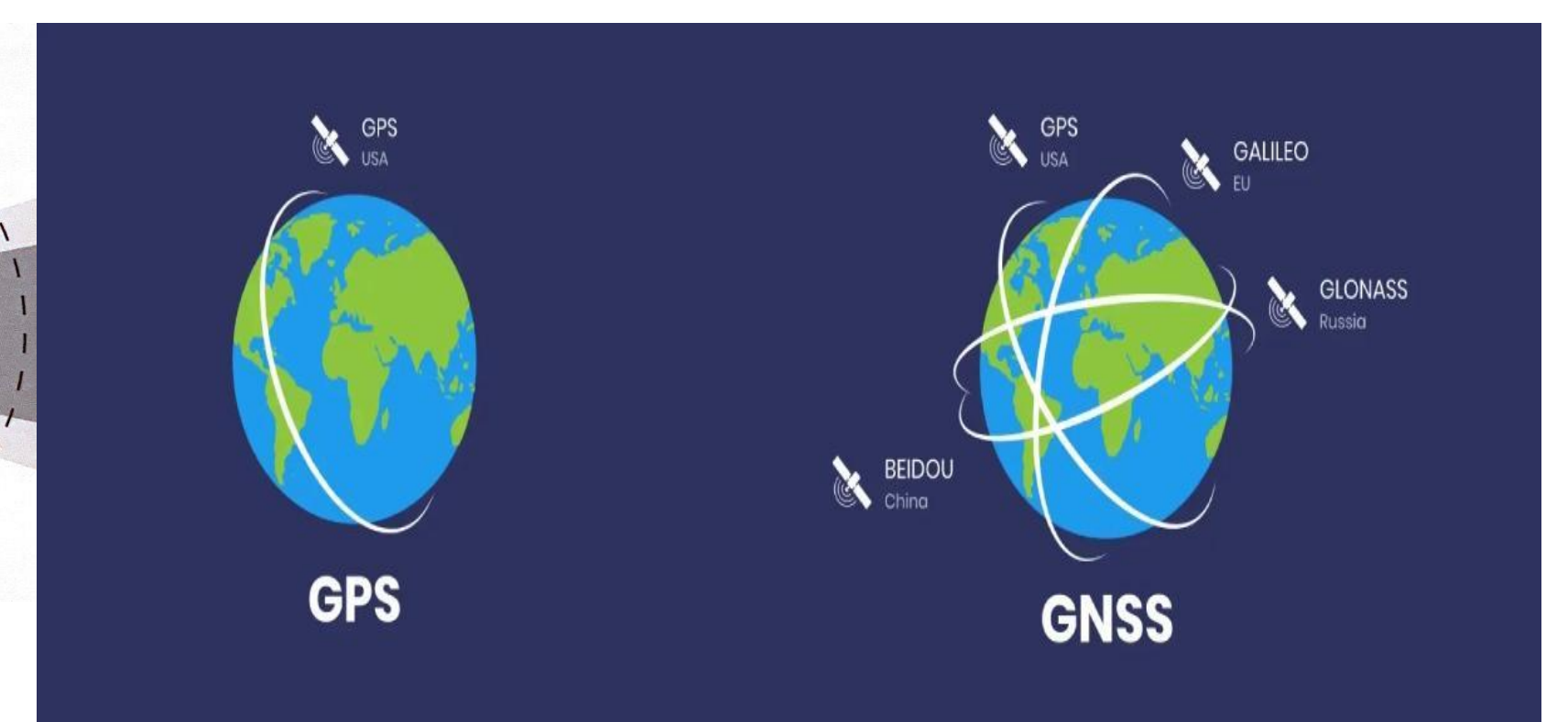
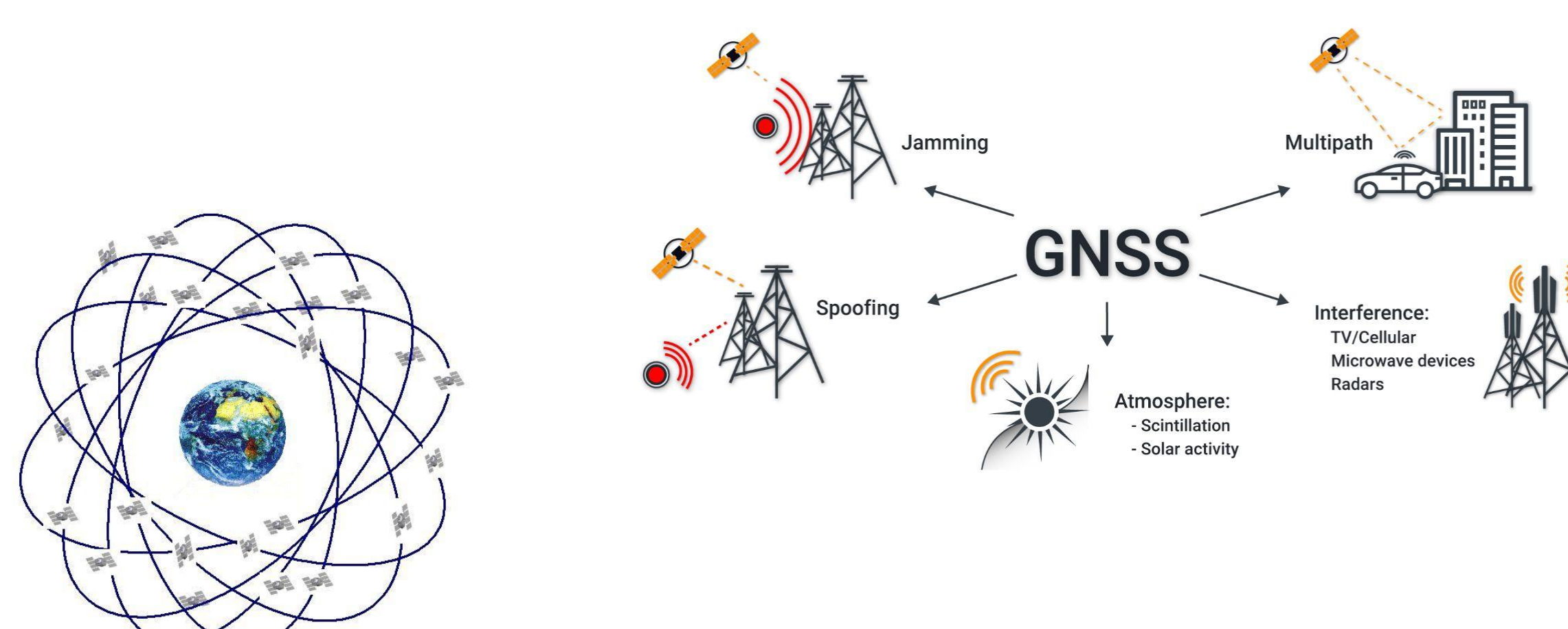
- Results and discussions

The diagram illustrates the RTK system components and data flow. A GNSS base station (labeled 'GNSS base station/GNSS + VRS') is shown on the left, connected to two GNSS satellites. A drone base station (labeled 'Drone base station') is shown on the right, connected to the same two GNSS satellites and the aircraft. The aircraft is shown receiving signals from the two GNSS satellites. The diagram also shows the aircraft receiving signals from the drone base station. The aircraft is shown in flight, with a pilot visible in the cockpit. The diagram is titled 'RTK (Real Time Kinematics)'.

Glonass-M	Glonass-K (of first series)	Glonass-K (of second series)
Design life 7 years	Design life 10 years	Design life 10 years
Mass 1415 kg	Mass 895 kg	Mass 1045 kg (estimate)
AFSS 3 CAFs	AFSS 2 CAFs+2 RAFs	AFSS 2 Cs + 2Rs (base option)
L10F, L1SF, L20F, L2SF,	Solar Arrays single-junction GaAs	Batteries Lithium-Ion
L300 (from 2015, 2014)	L10F, L20F, L1SF, L2SF, L30C	Solar Arrays triple-junction GaAs
Crosslink (RF)	Crosslink (RF)	L10F, L20F, L1SF, L2SF,
Laser Ranging	Laser Ranging	L10C, L1SC, L20C, L2SC, L30C
	SAR	Crosslink (RF + optical)
		Laser Ranging
		SAR
		Additional clock sub for advanced technology qualification



- **Conclusions**

[illegible]A satellite in orbit above Earth, featuring a yellow central body and large solar panels.

GPS	Galileo	GLONASS	BeiDou
6 Orbital planes 24 Satellite 55° Inclination Angle Altitude 20,200 km	3 Orbital planes 27 Satellite 56° Inclination Angle Altitude 23,616 km	3 Orbital planes 24 Satellite 64.8° Inclination Angle Altitude 19,100 km	6 Orbital planes 30 Satellite 55° Inclination Angle Altitude 38,300 km, 21,500 km