

Multi-GNSS Issues

Dinesh Manandhar

Center for Spatial Information Science

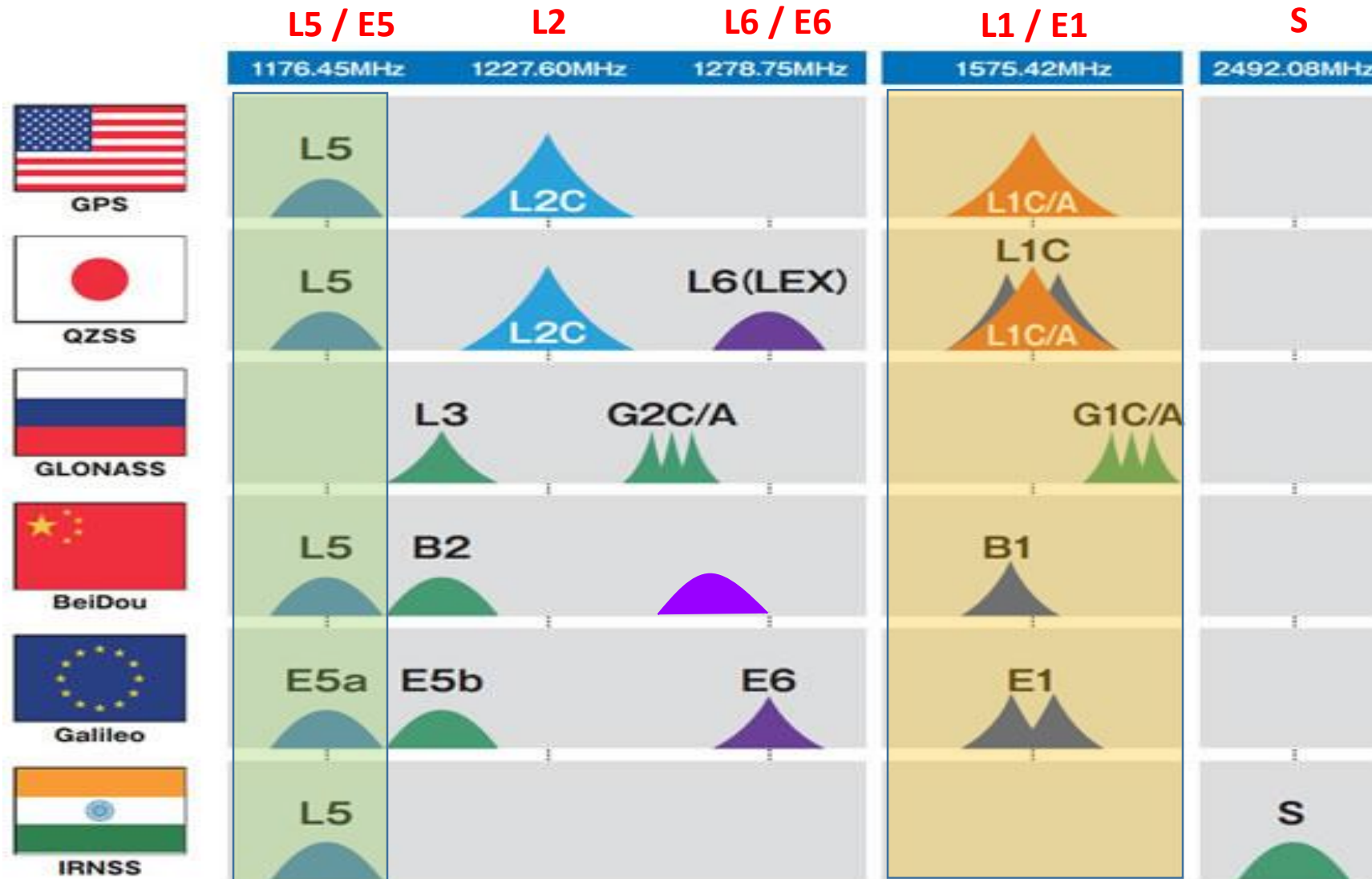
The University of Tokyo

Contact Information: dinesh@iis.u-tokyo.ac.jp

Multi GNSS Issues

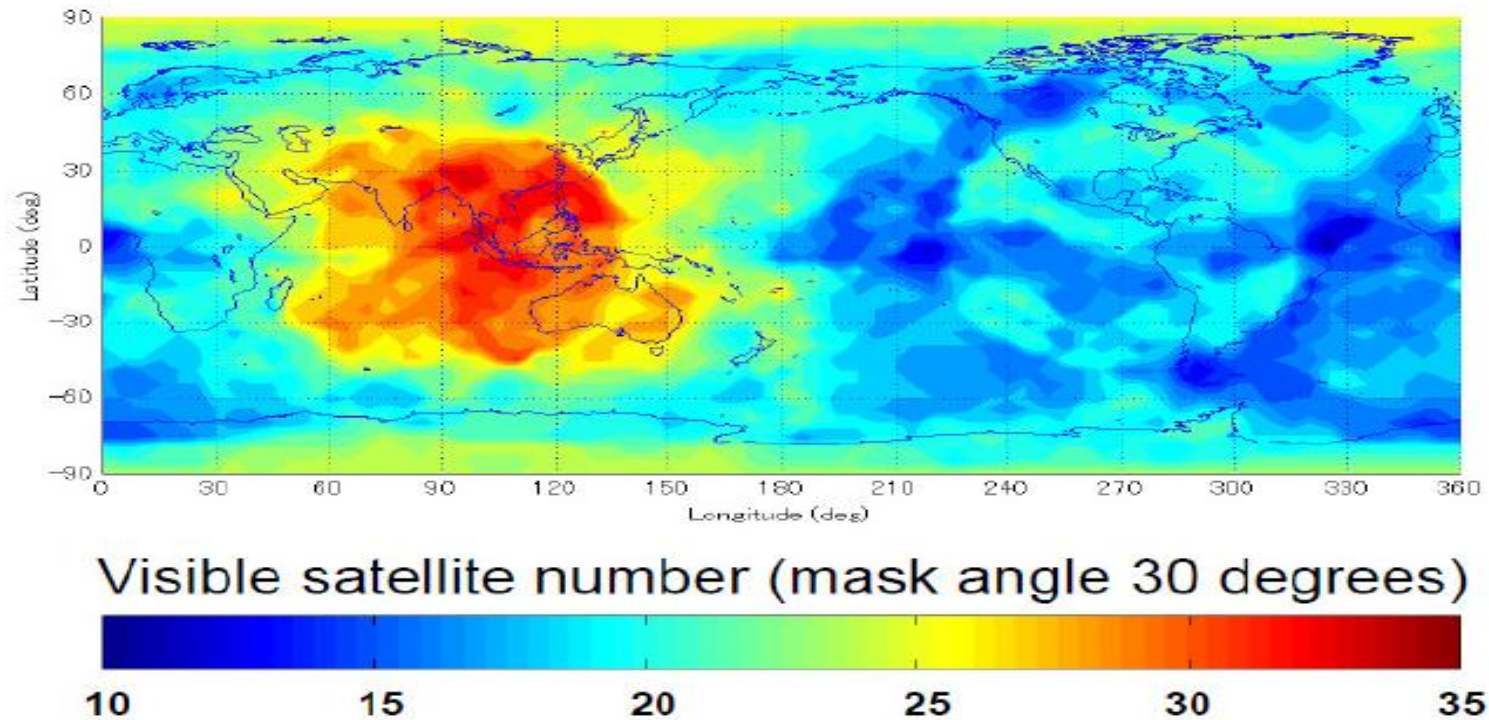
- In the past we had only GPS & GLONASS, now we have Galileo, BeiDou, QZSS, IRNSS
- Compatibility
 - Lets not hurt each other
 - Interference issues
- Interoperable
 - I'll use yours, you can use mine
 - Use of the same receiver and antenna to receive different signals
- Interchangeable
 - Any four will do
 - Can ONE GPS, ONE GLONASS, ONE Galileo and ONE COMPASS provide 3D Position?

Multi-GNSS Signals



Multi GNSS Signals: Benefits to Users

- GPS+GLONASS+Galileo+COMPASS+IRNSS+QZSS
- Asia-Oceanic region will see the maximum number of satellites



Multi GNSS Signals: Benefits to Users

- Increase in usable SVs, signals and frequencies
 - Increase in availability and coverage
 - More robust and reliable services
 - Higher accuracy in bad conditions
 - Less expensive high-end services
 - Better atmospheric correction
- Emerging new and expanding existing applications are to be expected
 - Atmosphere related applications
 - Short Message Broadcasting
 - SAR (Search And Rescue Applications)
 - Bi-static Remote Sensing
 - Compute Soil Moisture, Wind Velocity, Sea Wave Height etc...