USE OF GEOSPATIAL INFORMATION

DATA CREATION

❖ **Exponential Growth :**
- In number of data capturing methods
- In amount of data captured and generated

Location information

Location information

❖ **Data creation will be active; but could also be more passive**

❖ **LBS is likely to continue to grow**

MANAGING MASSIVE DATA

❖ **Need to make sense of data**
❖ **Requirement to find right information at the right time**
❖ **2.5 million quintillion bytes created everyday – need for enhanced data management systems**
❖ **Increasing use & reliance on big data technologies**

❖ **Artificial Intelligence (AI) will be more prominent**

❖ **Expert systems become more sophisiticated**

❖ **Generalisation on the fly can become a reality**

CONNECTING DATA

❖ **Ability to link information on the web will be increasingly important**

❖ **Semantic technologies will play an important role**

❖ **IOT (Internet of Things) - provide connectivity**

CLOUD COMPUTING

Infrastructure — IaaS

Platform — PaaS

Service

Software — SaaS

Data — DaaS
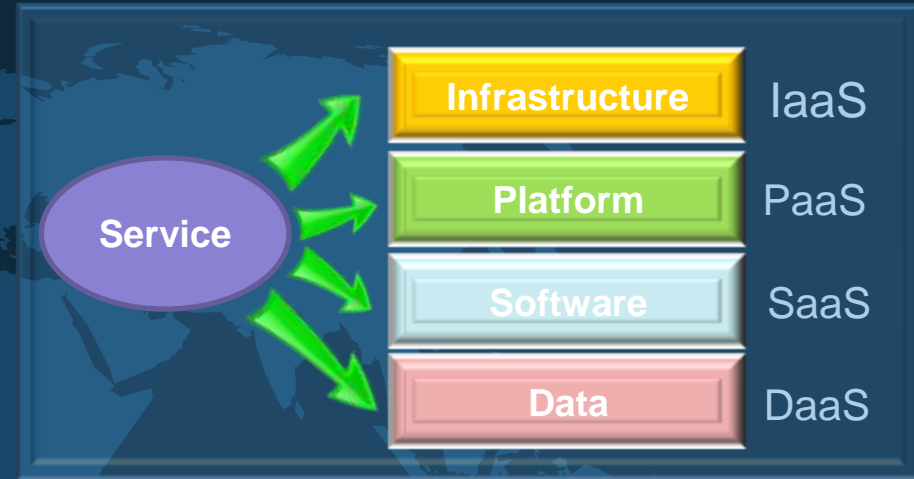
❖ **Use of the cloud – to increase significantly**
❖ **Likely to become standard**

OPEN SOURCE

- Goverments drive towards greater acceptance of OSS

- Number of NMAs / NMOs / NMCAs adopting OSS - likely to grow

- Education on OSS needed

OPEN STANDARDS

❖ **OS led OGC & ISO + others**

❖ **Facilitate interoperability**

❖ **InDoorGML – latest OGC standard**

❖ **Changing technologies & practices**
  ∴ Need for continuous development of additional standards

DATA CREATION & MAINTENANCE

❖ **Improvements in geospatial data collection**

❖ **2D mapping → 3D → 4D visualization - to accelerate**

❖ **3D will become vital, not just add-on**

❖ **Integration of 3D & business information systems**
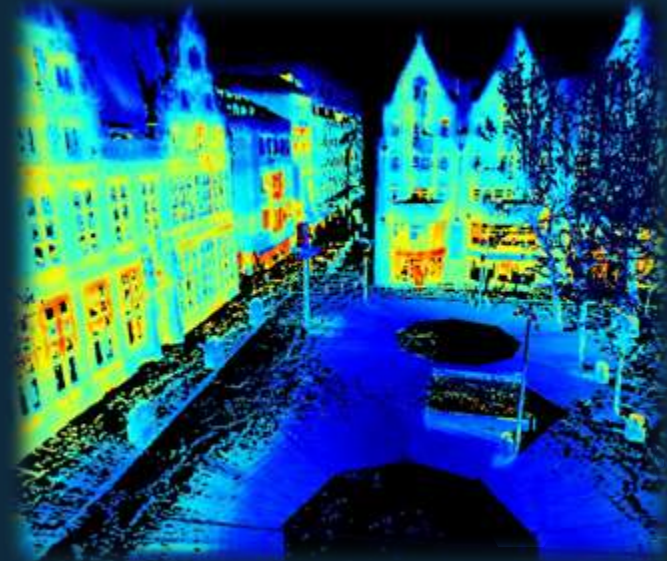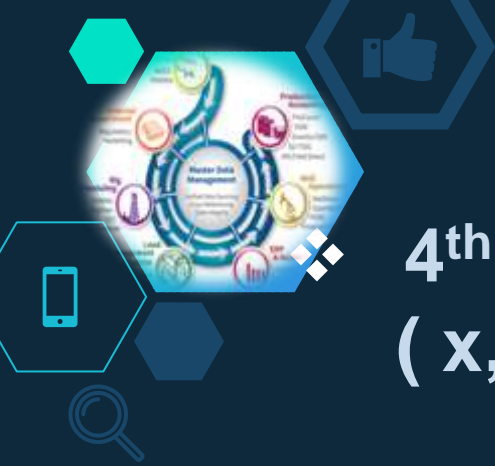
❖ **4th dimension, i.e. "time" to increase (x,y, z + "time")**

❖ **Used to carry out predictive modeling of future trends**

❖ **Overall management of data**

➡ Real time + time-referenced data

DATA SOURCES

- ❖ **Increase in quality of aerial images**
- ❖ **Focus on**
  - ✓ speed
  - ✓ analyses
- ❖ **Lower cost of imageries**
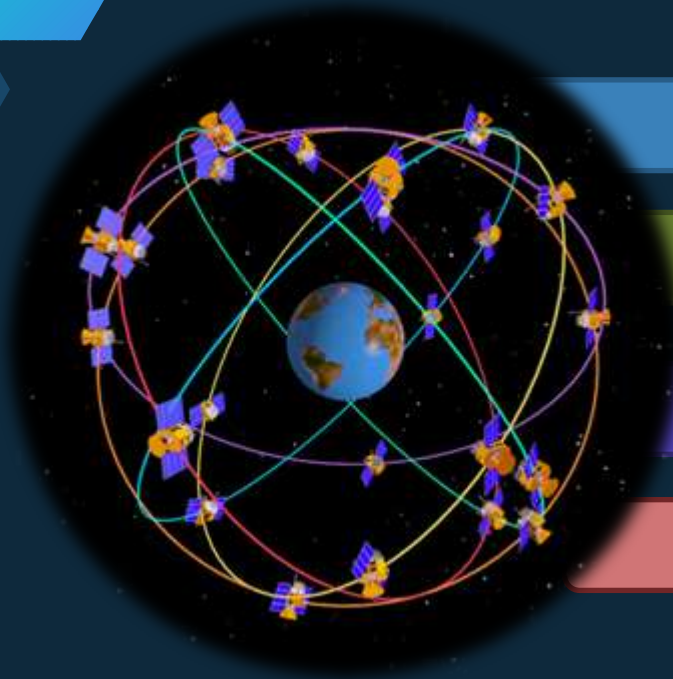- ❖ **Greater coverage & increased frequency**

- **Increased volume of high quality imageries**
- **Resolutions – drastically improve**
- **UAV's in civilian sector – increased usage**
- **Mobile mapping systems- will be upgraded**
- **Further use of 3D LiDAR**

❖ **Faster data collection + higher accuracy & greater integrity**

❖ **Broader spectrum of user equipment**

❖ **Greater integration of user equipment with other technologies**

INDOOR POSITIONING

❖ **Existing technologies in use**

- ✓ **wireless networks**
- ✓ **inertial**
- ✓ **magnetic**
- ✓ **Infrared**
- ✓ **Ultra-wideband**

- ✓ **Air pressure sensors**
- ✓ **Ultrasounds**
- ✓ **ambient light**
- ✓ **Bluetooth**
- ✓ **RFID**

❖ **Not a single source that provide widespread coverage, as yet**

CONCLUSION

- People are beginning to appreciate more on the need for geospatial information

- Technology driven trends – will have major impact in coming years

- Trends offer opportunities, but also present challenges

- Meeting challenges and ensuring benefit to all, ensures full value of geospatial information being maximised

Thank You

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