From Classical Surveying to GNSS Research
A Personal Perspective

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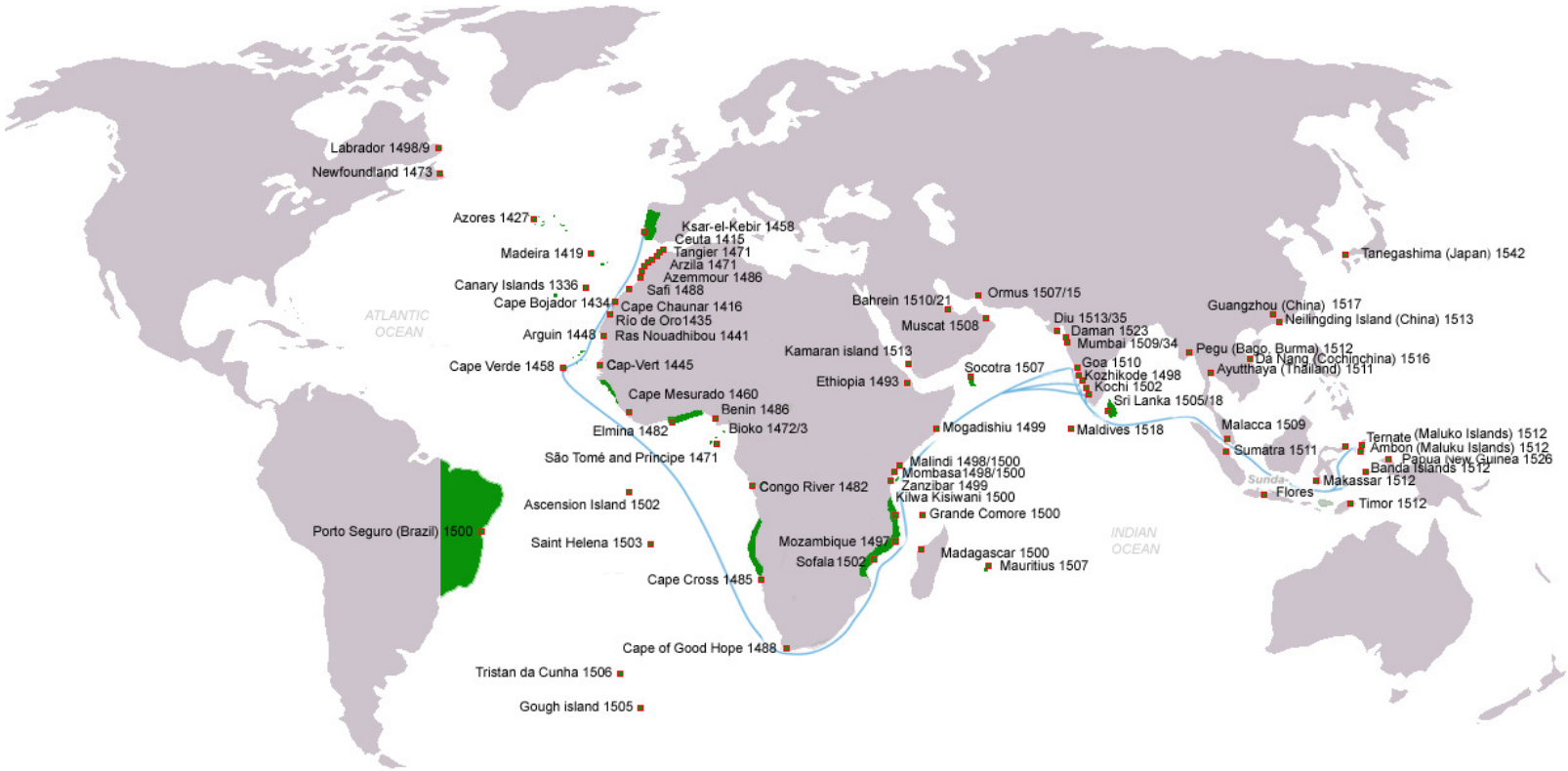
Overview

- ***Why Study Surveying/Geomatics Engineering?***
- ***Working in Surveying in the Beginning of the 21st Century***
- ***Surveying/Geomatics Engineering Education, International Panorama***
- ***International Career, or Just Doing What You Really Like***
- ***Moving From Classical Surveying to GNSS Research***
- ***GNSS, GIS, Remote Sensing, Cartography, Etc…What a Mess!***
- ***Conclusions***

Why Study Surveying/Geomatics Engineering



Because knowledge is power…when this knowledge can be charted/mapped properly, then a nation can use its resources in an optimal way, according to its own interests

Why Study Surveying/Geomatics Engineering

Surveying/Geomatics Engineering is still the most complete and effective engineering degree preparing capable professionals for the art of "measuring the World"

Working in Surveying in the Beginning of the 21st Century

- ***Rapid development of "classical" surveying instrumentation, especially Total-Stations***
- ***Most of field data started being collected directly in digital format***
- ***GPS is a great technology, however not accurate enough for real-time mm/cm-level accuracy***
- ***Urban development is the major economic drive for many countries, surveyors are in great demand***

Surveying/Geomatics Engineering Education, International Panorama

Some countries/universities develop very strong Surveying/Geomatics (GNSS) programs that attract students/researchers from all over the World:

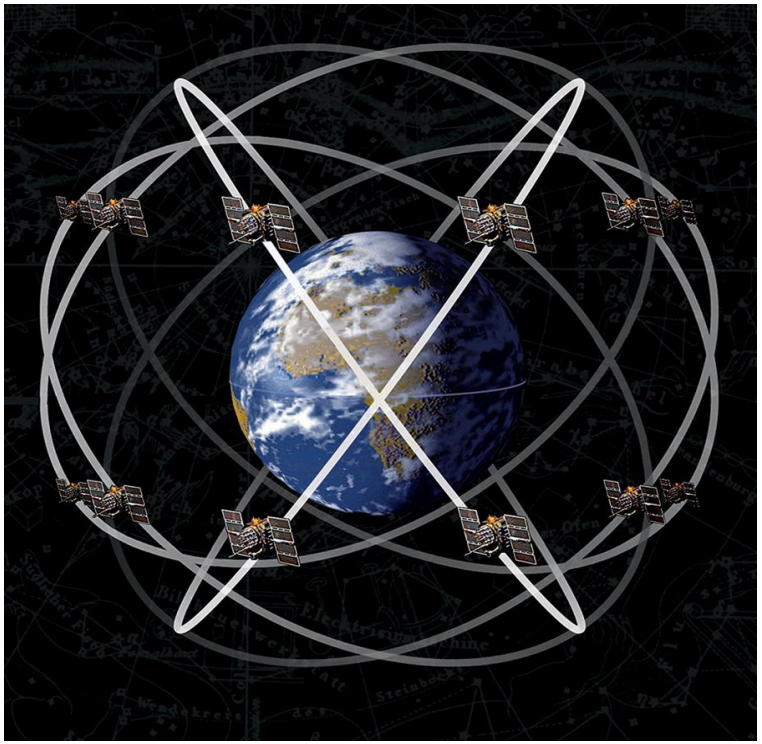
- ***The Netherlands***
- ***Germany***
- ***Finland***
- ***Canada (UofCalgary, UNB)***
- ***Etc.***

Surveying/Geomatics Engineering Education, International Panorama

International Career, or Just Doing What You Really Like

- Mobility is today a part of our daily lives
- Academic degrees / professional competences are becoming (almost) standardized
- Same curricula and working methods are implemented across different countries / cultures
- No excuses for not trying an international experience / education / career

Moving From Classical Surveying to GNSS Research

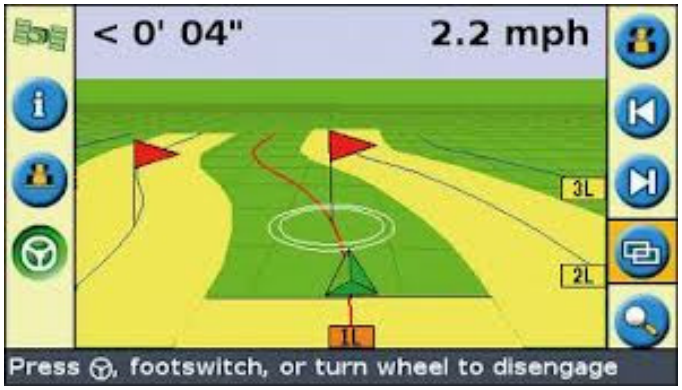


- As of 2013 we have GPS + GLONASS + COMPASS + GALILEO (?) satellites
- Signal diversity opens unprecedent possibilities for positioning and navigation
- GNSS research is at its zenith (IMHO), many challenges and breakthroughs are expected

GNSS, GIS, Remote Sensing, Cartography, Etc…What a Mess!

Automation becomes pervasive in most applications, supported by reliable and accurate (GNSS) positioning information, however...

GNSS, GIS, Remote Sensing, Cartography, Etc…What a Mess!



This level of GNSS-based positioning accuracy is only relevant if supported by the other Geosciences disciplines such as GIS, remote-sensing, cartography, etc.

Conclusions

- Surveying / geomatics is still a career with great future, and potential
- Skilled surveying / geomatics engineers are always in demand internationally
- Geomatics in an international field, constantly evolving, sometimes with major projects being developed among several countries / regions
- Regardless of the field of study/work, all geoscience disciplines complement each other and allowed impressive developments in sensors, devices, software, analysis tools, etc.
- Like in most professions in these days, computer and software are an integrant part of a geomatics engineer daily work. Professionals should acquire a good level of knowledge.
- However, there are some challenges ahead, mostly due to a general lack of knowledge about this profession outside of the surveyors/geomatics community

Thank You!

Trimble is hiring, we´re looking for GNSS Engineers!

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