

Possible Ways to FIG Standards for Surveying by Drones

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SUMMARY

The first long-distance roads in Europe were built by Imperial Rome for the benefit of its legions. The ruts created by the Roman chariots were then used by all other wagons. These ruts later became a gauge for laying the first railway lines.

Modern standards started with the obvious things such as weights and measures. However, they have since evolved to permeate virtually all aspects of our lives. Today there are standards that cover everything from shoes sizes and screw threads to the Wi-Fi networks that connect us to each other. These international standards ensure that customers and consumers can be confident that the products and services they use are safe, reliable and of good quality.

This confidence creates indisputable economic benefits. These include streamlining internal company operations, innovating and scaling up operations, and creating or entering new markets.

But what exactly is a standard?

Generally, a standard is accepted to be a rule or requirement that is determined by a consensus opinion of users. It prescribes the accepted and (theoretically) the best criteria for a product, process, test, or procedure. The benefits of a standard are safety, quality, interchangeability of parts or systems, and international consistency.

With this in mind, what could a Standard, or a series of Standards for Surveying by Drones look like?

Three possible approaches might be: a FIG publication, a consortium of interested parties producing an

ad-hoc standard, or an ISO standard.

An example of FIG publications is: Publication No 74 Cost Effective Precise Positioning with GNSS, 2019 (<https://www.fig.net/resources/publications/figpub/pub74/Figpub74.pdf>) This type of publication is relatively simple to create and it would be entirely under the control of FIG. However, its audience is limited.

A second approach might be to establish more global consortium of interested parties to produce an ad-hoc standard. One example endorsed by FIG is the International Property Measurement Standards (<https://ipmsc.org/>). This is more work and requires considerable consultation and consensus, but it would reach a much broader audience and would likely be accepted by a broader range of stakeholders.

A third approach would be to create an ISO or OGC type standard. ISO TC211 Geographic information/Geomatics, and ISO TC172 SC6 Survey Instrument Standards provide umbrella commissions for FIG and Surveying standards in general. This approach is feasible, but would a great deal of effort. One standard that is currently being revised and expanded, which was entirely initiated through FIG is the ISO 19152:2012 Geographic information — Land Administration Domain Model (LADM). ISO is certainly the most difficult approach, but would provide a gold standard of sorts!

This paper will discuss in broad terms these three general approaches and what would be required to produce a, or a series of Standards for Surveying by Drones.