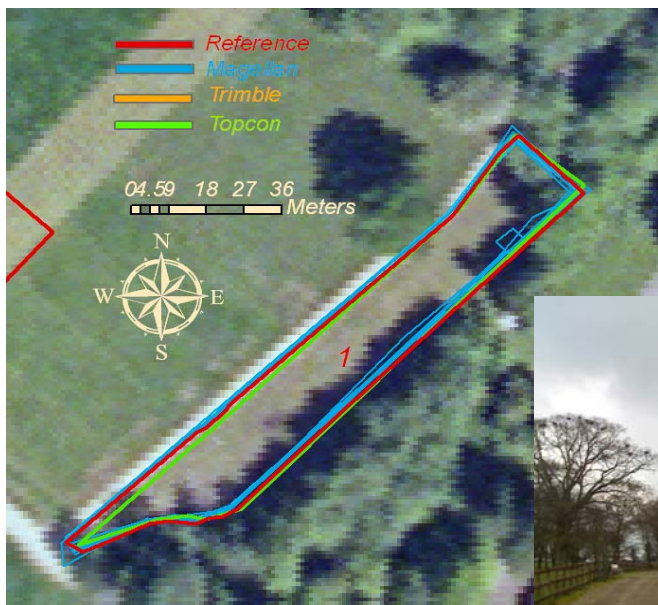


8th GNSS workshop – Dublin 2008

Ballsbridge Court Hotel in Dublin, Ireland
9th - 11th April, 2008

Devos Wim



EUR 23697 EN- 2008

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Contents

1. Introduction 4

 1.1. Date and venue4

 1.2. Workshop objectives.....4

2. Findings 4

3. Conclusions 6

Annex I: Agenda..... 8

Annex II: List of participants..... 10

Annex III: Observations of Krasimira Galabova, DNE from BG 13

1. Introduction

1.1. Date and venue

1.1.1. 8th GNSS Workshop 2008, 9-11 April, 2008

1.1.2. Dublin, Ballsbridge Court Hotel

1.1.3. The workshop was jointly organised by the Irish Department of Agriculture, Fisheries and Food (DAFF) who took care of the logistic issues. The three person JRC team was in charge of registration, chairing the sessions and discussions. The workshop agenda is presented in annex I.

1.2. Workshop objectives

1.2.1. The first objective of the workshop was to review and update the various technical aspects regarding the control methods. Issues at hand are:

- What requirements have appeared?
- What information became available?
- How does it work in practice?

1.2.2. Under the workshop formula, the event should also provide a forum to discuss issues freely and provide a channel for all stakeholders, Member States, contractors and even auditors to express feedback.

2. Findings

2.1.1. The 8th GPS Workshop, renamed GNSS Workshop on request of the Galileo Supervisory Authority, was organised jointly with the Irish Department of Agriculture, Fisheries and Food (DAFF). DAFF took charge of the venue facilities and the field day site and logistics. DAFF's subcontractors supplied rain clothing and coffee break facilities. The organisation was flawless and the demonstrated level of support was exemplary. Close to 120 persons, with representation of 24 member states (MS) attended the GNSS workshop

2.1.2. The first session was dedicated to MS experience on forest measurements. Unfortunately, the presenters were rather inexperienced in making presentations and as a result no clear picture of the issues and experiences emerged. The presentation therefore also failed to trigger a constructive discussion on the issue.

2.1.3. The invited speaker of the Galileo Supervisory Authority failed to catch his flight and his slide show was summarily presented by WD. The presentation called for cooperation on parcel area measurement and concluded that EGNOS was, although not officially, in fact fully operational and should be endorsed by JRC recommendations without any reservations. When asked on the JRC position, WD replied that JRC would waive its reservations as soon as EGNOS became officially operational and its performance had been tested to be compliant with its specification.

2.1.4. Finally, the issues of measuring vineyards were presented. During the subsequent discussion wine growing MS seemed rather reluctant to provide much insight in their current practices and issues, so

little advance was made towards a better understanding of what needs to be done. A participant commented that the workshop offered more questions than answers.

2.1.5. During the field day, the AT representative indicated during a personal conversation, that JRC was unduly favouring GNSS technology, which he considered less appropriate for the AT conditions. They used measurements on orthophotos after verifying currency in the field. WD replied that JRC had no preference for any technology and a method should be acceptable if it meets the Regulation's requirements. As the MS have to provide proof of the method's performance, I suggested that he should prepare the documentation to show just that.

2.1.6. The Field day was held at Grange Research Station, one hour drive from Dublin. The weather was variable and although a shower and a hailstorm occurred, most of the anticipated program could be addressed. There were 4 GNSS device manufacturers

- Magellan
- Trimble
- Topcon
- Satcon Systems
- A setup for linear measurement with survey tape was improvised with the help of DAFF
- A fifth manufacture (Leica) cancelled just before the start of the workshop

There were also 2 demonstrations of GPS-guided Variable Rate Applications from the FieldFact project and from farm appliance manufacturer John Deere, representing both the low and high end extremes of such implementations.

A detailed record of the Field day and the results of the measurements done can be downloaded from <http://mars.jrc.ec.europa.eu/mars/News-Events/8th-GNSS-Workshop/Presentations-and-Data-download/9481>

2.1.7. The next morning, the status of certification on devices and the potential for certification of users were presented. Here, the discussion really lived up, some of the key observations were

- An official position of the EC on certification is needed. (what will it and will it not do for the MS?).
- On the issue how to acquire certified devices, JRC (WD) considers that based on BE experiences, requiring a device certificate is probably not acceptable as a selection criterion for EU public procurement; however specifications to meet the certificate standard will be valid.
- There is little appetite with the MS for a compulsory certification.
- DG Agri Auditors should be better trained in measurement, their methods are not always considered applicable.
- Some participants feel a school diploma or university degree exempt for the need of certification.

- Some think that certified inspectors are better accepted by the farmers.
- Certification is considered useful for MS hiring temporary staff.
- GNSS tools should be complementary with other tools (tape, screen digitization) that might be better suitable under certain discussion.
- Performance of devices cannot be disputed when certified (dixit Satcon upon a remark on Satcon's allegedly incredible performance by Magellan)

2.1.8. The results of the field day were presented in a format where the manufacturers discussed their responses to the experienced challenges and conditions of the previous day. Some noteworthy observations are:

- Measurement in the forest was surprisingly good, attributed to the observed lack of leaves.
- When measurement failed due to bad constellation or other conditions, manufacturers would change the operational parameters of the device in order to get a reading, be it of lower quality. This was not possible with the only certified device because certification requires such settings needed to be constant (e.g. GDOP. Number of satellites)
- Some remarks were made on unconventional behaviour of the devices observed during the measurements
- The field conditions represented in the challenges would not normally be measured with a GNSS device but with other means

2.1.9. The JRC presentation on linear measurement also triggered quite some discussion. It highlights:

- In the field day conditions (175 m length, free horizon), tape measurement is more accurate than GNSS measurement.
- The recommended stop-and-go method for linear measurements, conflicts with the JRC recommendation for kinematical method for area measurement.
- In particular, kinematical causes an issue of overestimating the perimeter used for buffer tolerance calculation

3. Conclusions

3.1.1. The GNSS workshop was successfully organised, with an impressive collaboration of the Irish DAFF, esp. during the field day. Regarding content, although there was extensive discussion on the last day, there seems to be a desire for more concrete information on the EC position on new developments), in particular during the introductory sessions. If it is our intention to obtain such content from the MS, rather than providing it, an alternative more appropriate workshop format (e.g. splitting up in discussion groups) should be considered.

3.1.2. Regarding the EC position of these new issues, technical documentation and recommendation should accommodate for

- clear statement how and with what to measure exclusions,

- the smallest area to be measured with GPS,
- visual control of the parcels in case of permanent borders – is it allowed or not,
- is there any article related to ‘user certification’
- forest – how should the tests of equipment be ran? Season? Forest? Parcels shape? Size?
(why not to perform just a visual check and work on the basis of the GIS data?)

Annex I: Agenda

Wednesday, 9th of April 2008

12:00 – 14:00	Registration
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Session 1: Introduction, on-the-spot-controls in the forested areas

14:00 - 14:15	Introduction, workshop objectives	Wim Devos (JRC, Italy)
14:15 – 14:45	Measurement of Natura 2000 forest areas - problems and solutions	Argo Lilles (Private Forest Centre, Estonia)
14:45 – 15:05	Experiences from the controls in the forest	Vygintas Dūda (NMA, Lithuania)
15:05 – 15:30	Coffee	

Session 2: Control of vineyards, status of EGNOS

15:30 - 16:00	Status of EGNOS	Ugo Celestino (GSA, Belgium)
16:00 - 16:30	Control of vineyards	Krasimira Galabova (JRC, Italy)
16:30 - 17:00	Briefing of the field day	Aleksandra Sima (JRC, Italy)
17:00 – 17:30	Discussion	

Thursday, 10th of April 2008

Session 3: field day

9:00 – 17:00	Practical exercise in the field (lunch provided by the organisers)
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Friday, 11th of April 2008

Session 4: Certification, standards, Community issues

9:00 – 9:15	SDIC, overview	Wim Devos(JRC, Italy)
9:15 – 9:45	Certification scheme	Wim Devos (JRC, Italy)
9:45 – 10:15	Certification of the user in area measurements validation scheme	Martin Grzebellus (NAVCERT GmbH, Germany)
10:15 – 10:45	Coffee	

Session 5: Analysis of field results, results of other tests

10:45 - 11:30	Presentation of data collected in the field	Aleksandra Sima (JRC, Italy)
11:30 - 12:00	Linear measurements with GNSS	Aleksandra Sima (JRC, Italy)
12:00 - 12:30	Greetings	Jack Creaner (DAFF, Ireland)
12:30 - 13:00	Closing discussion	

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Annex III: Observations of Krasimira Galabova, DNE from BG

1. After the first session on Wednesday, 9th of April 2008, it was mentioned that GNSS devices are not the most appropriate approach for the measurement in the forested areas in view of possibility of loss of signal, insufficient number of satellites, exceeding of the DOP limit, etc.
2. Issue of the technical tolerance /3m x the parcel measured perimeter/ origin was discussed. It was explained that this requirement correspond with Article 15 of COMMISSION REGULATION (EC) No 1975/2006:

“However, for the measurements set out in Article 36(b) (iii), (iv) and (v) of Regulation (EC) No 1698/2005, the Member States may define appropriate tolerances, which shall in no case be **greater than twice the tolerances set down in Article 30(1)** of Regulation (EC) No 796/2004”

Following the presentation on control of vineyard short discussion on MS practices was held. The main topics of discussion were:

- Object to be measured – some MS representatives mentioned that in eligible vine parcel areas of services, necessary to cultivate the vines have been included besides planted area with vines. The width of areas of services differs depending on the given MS.
- Application of the technical tolerance – some MS mentioned that 1.25 m x the perimeter of the measured parcel was used up to now.
- Vineyards on terraces, steep terrain – some MS mentioned that walls, unusable slopes higher than 2 meters are excluded from eligible area. It was discussed that the eligible area has to be the projected area.
- During the next days the discussion and exchange of experience with representatives of different MS has been continued concerning appropriate measurement tools especially in specific cases. Some MS mentioned that they made measurements on vineyards through ortho photo, dGPS, stand alone GPS, tape or laser meter.
- It should be emphasized that main problem which MS administrations marked is the measurement of terraces, steep terrain and scattered parcels and appropriate tools to be used.

It should be pointed that MS administration expects common rules and detailed guidelines to be elaborated.

3. During the field day on Thursday, 10th of April 2008 practical exercises were carried out with different GNSS equipment providers. It gave an opportunity of MS participants to exchange their experience and to see more different GNSS receivers and solutions in the forest area.
4. Appropriate number of groups was created and each group spent about 45 minutes on each parcel with each equipment provider. The equipment providers proposed the best possible solution (parameters, methodology of the measurement) to measure the parcels as accurate as possible and presented it to the groups. Not all of the MS representatives managed to measure parcel themselves in view of short time and relatively large groups.
5. During the last day Friday, 11th of April 2008 an overview of [SDIC](#), [Certification scheme](#), [Certification of the user in area measurements validation scheme](#), measurement of [linear features with GNSS](#) was carried out. Also the [presentation of data collected in the field](#) from different equipment providers was made.
6. About 15-20 % of participants figured out the certification of the user in area measurements validation scheme as unnecessary.

Conclusions and proposals

1. It would be useful the survey/questionnaire of different approaches on vineyard measurements on specific cases /terraces, isolated vines/ to be send to some MS for know-how exchange.
2. In terms of efficiency it would be more useful the participants to be divided by smaller groups during the field day thus allow them to measure each parcel themselves with each device.
3. For discussion part of the workshop division by smaller groups will stimulate participants to express their opinion and will enhance workshop effectiveness as a whole. It would be useful the questions asked to be provided to the participants before the workshop.

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Abstract

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