

FIG WORKING WEEK ATHENS – GREECE
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New surveying methodologies for the cartographical updating of cadastral maps and archives



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Preamble

- In 2003, the Italian Land Agency carries out a substantial change in the management and in the updating of cadastral cartography:
- Outer technicians will have the possibility to update archives, as well as to consult them.

Newness

There are two absolute innovations:

1. Numeration of all paper maps.
2. New surveying methodologies

The Digital Map

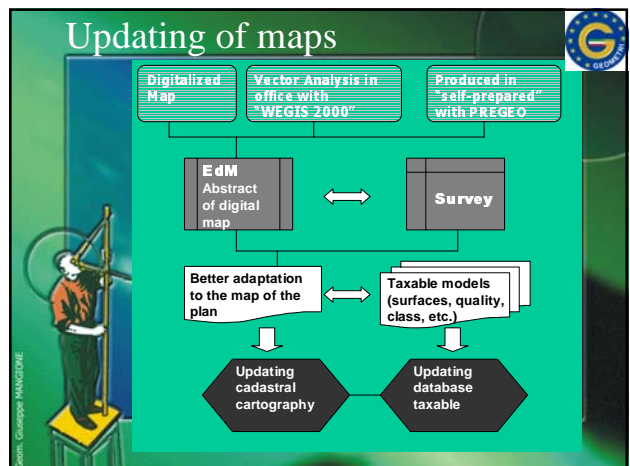
- Complete abandonment of paper map.
- New data processing system called "WEGIS 2002".
- Updating of maps only in a numerical way.
- Vector processing of parcels before the updating.

PREGEO 8

- The outer operator can interact with the new digital map through a new software: PREGEO 8

It gives the possibility to:

1. Elaborate the measurements mapped in the field
2. Control their exactness
3. Draw up an "updating proposal" of the map



Abstract of digital map

and of a file ASCII (expansion EMP) containing all necessary information for the cartographic updating

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New surveying methodologies

- Use of GPS
- Altimetrical information with GPS and total stations
- Levelling

GPS

Estimated restrictions for GPS measures.

Type of instrument	Static modality	Kinematical modality	RTK
Single frequency	≤ 15.000 m	≤ 1.000 m	--
Double frequency	> 15.000 m	≤ 15.000 m	≤ 15.000 m

GPS - BASE

Software interface for Base Station configuration. Callouts include: Name Base GPS (Station), X, Y Geocentric coordinates, Height of antenna, Geocentric Z, Methodology (Post elaboration or RTK), Beginning and end of acquisition, Type of receiver, Materialization of the point, DOP Value <1-6>

GPS - ROVER

Software interface for Rover configuration. Callouts include: Name point GPS (beaten point), Delta X, Delta Y, Delta Z, Difference between geocentric coordinates of the point and of the station ones, Precision values, Precision indicators (variance-covariance or coefficient) for baseline > 5.000 m, Height of antenna, Materialization of the point.

Altimetrical information

- Only difference of levels NOT Altitude
- Necessity to indicate an altimetrical point of reference for each PF
- New monographic file of PF

Tacheometric station

Rilevo Celerimetrico: Punto Stazione (riga 1).

Stazione

Identificativo del punto:

Altezza strumentale (m.dom)

Nota (max 40 caratteri):

Nota:

Buttons: Accetta, Annulla, Guida, Aggiungi

Callout: The instrumental height has been added

Tacheometric point

Rilevo celerimetrico: punto osservato (riga 2).

SELEZIONE TIPO MISURA

Punto osservato

Identificativo del punto:

Direzione azimutale:

Distanza inclinata:

Direzione zenitale:

Altezza mira:

Nota (max 40 caratteri):

Nota:

Buttons: Accetta, Annulla, Guida, Aggiungi

Callout: Target height to fulfil only when you want to know the altimetrical information

Levelling from an extreme

Rilevo Altimetrico: lettura al filo medio (riga 5).

Livellazione

Identificativo Punto:

Letture Al Filo Medio:

Nota:

Unità Di Misura: Metri

Buttons: Accetta, Annulla

Callout 1: Name of the point already beaten

Callout 2: Medium cable reading

Levelling from the centre

Rilevo Altimetrico: letture ai fili medi (riga 4).

TIPO LIVELLAZIONE

Livellazione dal mezzo

Identificativo Punto Indietro:

Identificativo Punto Avanti:

Letture Filo Medio sul Punto Indietro:

Letture Filo Medio sul Punto Avanti:

Nota:

Unità Di Misura: Metri

Buttons: Accetta, Annulla

Callout 1: Points already beaten

Callout 2: Medium cable reading

CONCLUSIONS

-What does the Italian surveyor expect from all these innovations?

-The elements that the Italian surveyor expects from all these innovations are the following:

1. The telematic transmission;
2. The approval, the updating of the map and of taxable values in real time;
3. The consultation ON-LINE, both of maps and of taxable information.

CONCLUSIONS

THANK YOU FOR YOUR ATTENTION.

I wish you successful proceedings