Between Spatial Data Management

And the Georeferencing Market

The needs of Landmanagement and Property Security Systems

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1. The development of the Georeferencing Market

Jörg Henlein (1510) from Nuernberg made the people ask: **„What time is it ?“**

GPS (21th century) makes the people ask: **„Where am I ?“**

The markets are offer - oriented - but driven by the client

1.1 What's the offer of the surveying business?

- Mapping
- Cadastre
- Surveying
- Related professional areas:
    - appraisal business
    - expertises and certifications for courts

1.2 Who were the clients?

- Military Mapping Agencies
- Tax- and Finance Authorities
- Infrastructure Authorities
  - Streets, Railways, airports etc
  - Settlements
  - Land Consolidation
- Private and Public development market
- Landowner, Landlords
- Industry

1.3 Who represented the offer?

- <u>Public sphere</u>:

- Mapping Authorities like IGN, Landesvermessungsämter etc
- Authorities for Land Consolidation
- Tax - Authorities

- Semi-Public Sphere:

- Publicly appointed Surveyors, Géomètres Experts, Ingenieur-Geometer,
- Practiserende Landinspectoerers, Landmeter Experts etc

- Private Economy Sphere:

- Licensed / Chartered Surveyours
- Land Surveyors
- Professional Experts
- Mapping Industry

1.4 The markets were local

- by local competence of the authorities
- by local competence of public appointments
- by the economical significance of the distance to the object
- by the spreading of the technical knowledge
- by language and compatriotship

- exceptions: aerial photogrammetry
  international mapping and
  infrastructre projects
 international coorperation with
  upcoming countries

1.5 Constraints and rim conditions, which formed the markets:

- Public regulations and restrictions by law, state regulations
- Public service, paid by the taxpayer
- Political decisions
- Professional restrictions
- Knowledge of the user (only a small group of the population)
- Consumer needs (reconstruction of German towns, serial hauses etc.)
- Capital needed for expensive technology
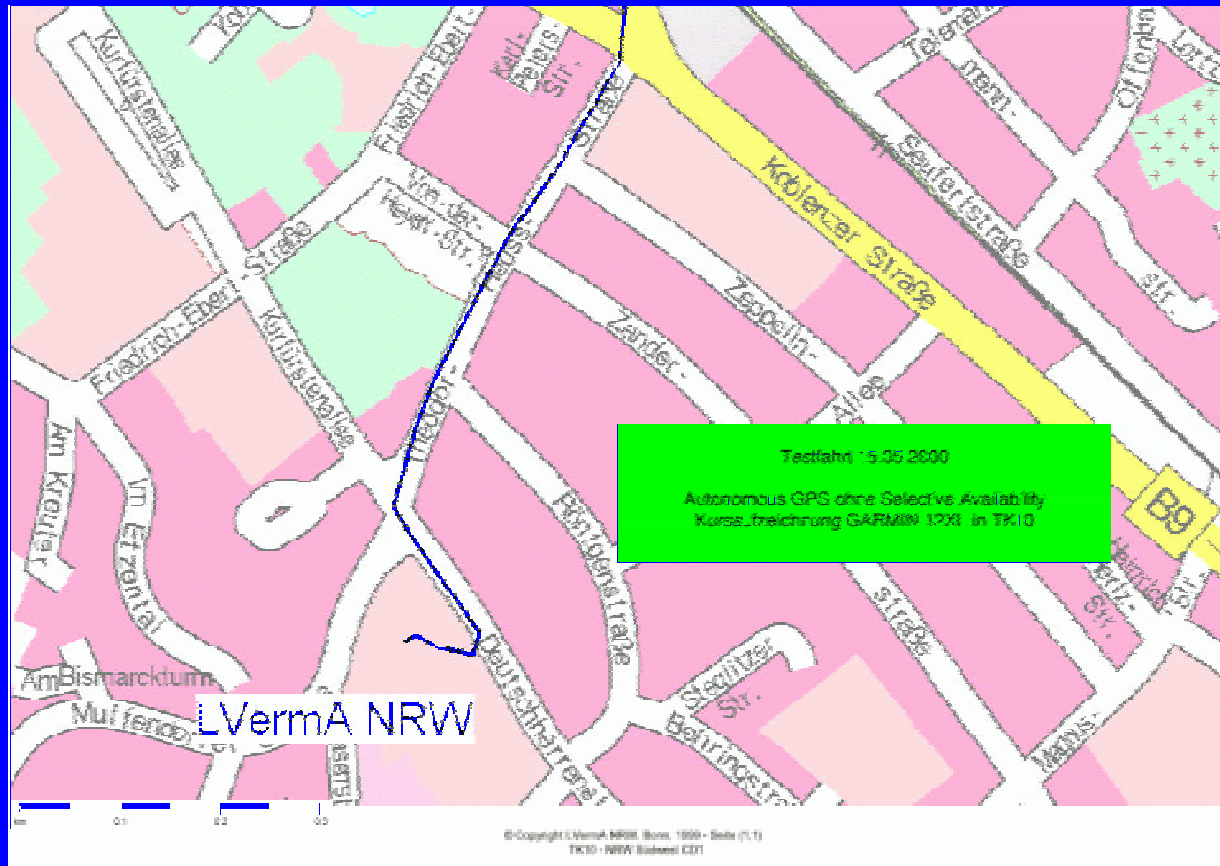- Technology (theodolite, coordinate systems, mapping...)

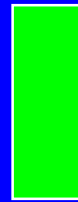# … SA Off - what does it mean?
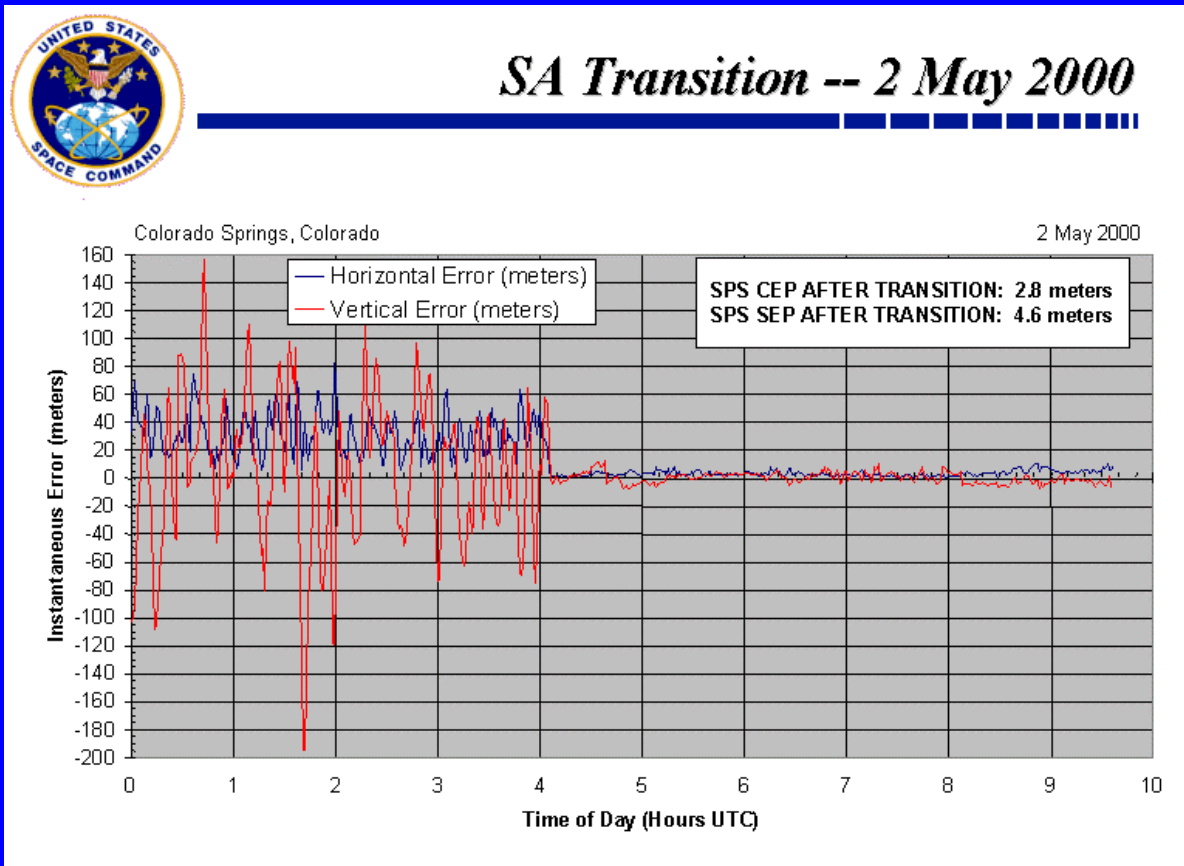
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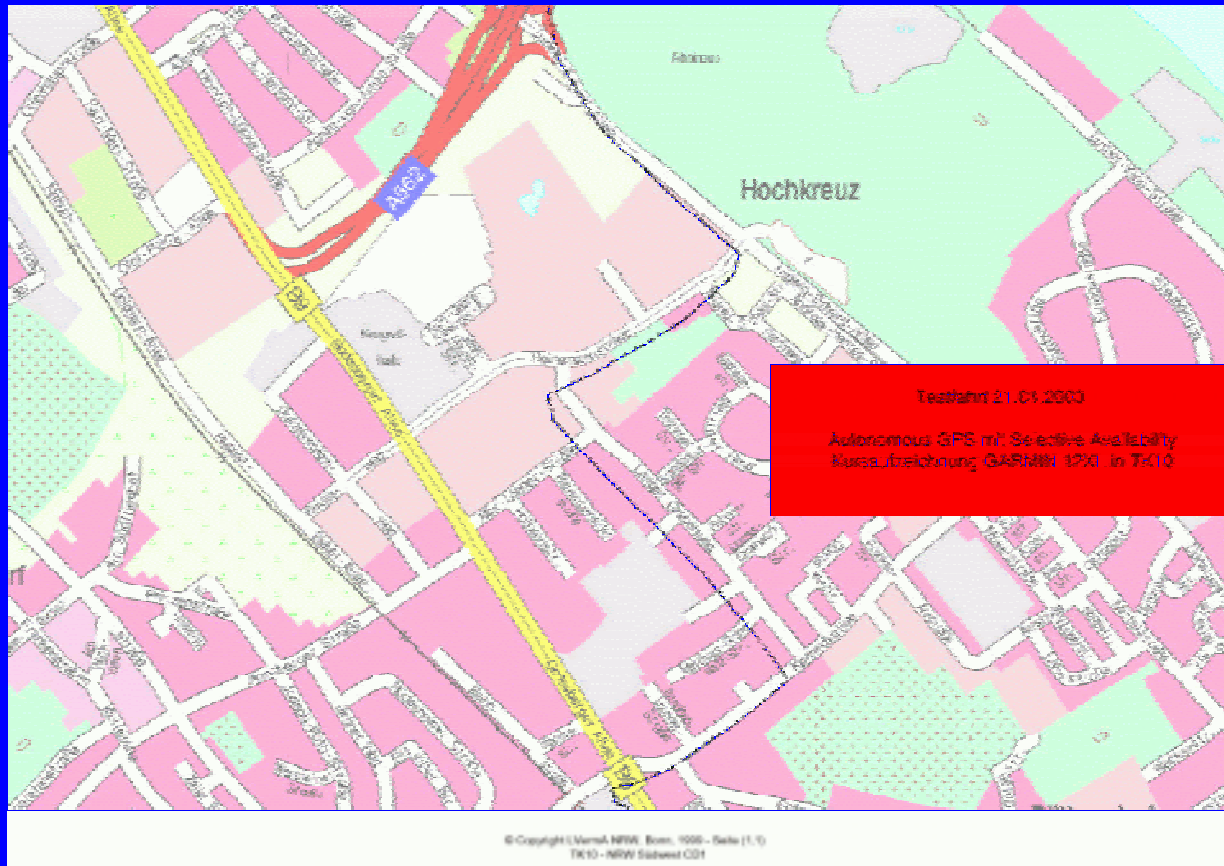
Track after SA OFF

Anforderungen an die Positionsgenauigkeit

- **Basis data**
- trig. & Controlpoints
- real estate cadastre
- utility cadastre
- gas, Water, elecricity ...
- other users
- agrarian sector
- forestery economy
- environmental sector
- traffic management

- Property Security PDGPS
- [cm]
- Reconstruction DGPS
- [dm] smoothed Code
- Topographie DGPS
- [m]- GPSNav.lösung
- Flottenmanagement

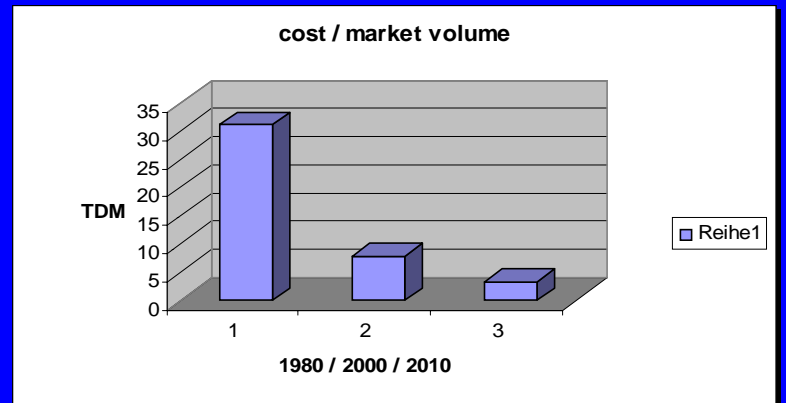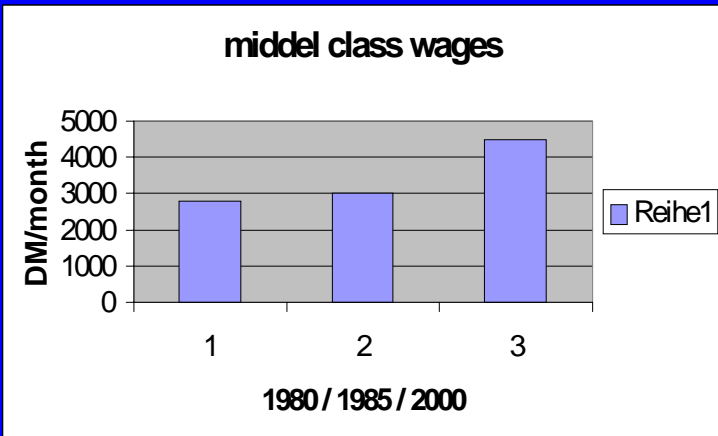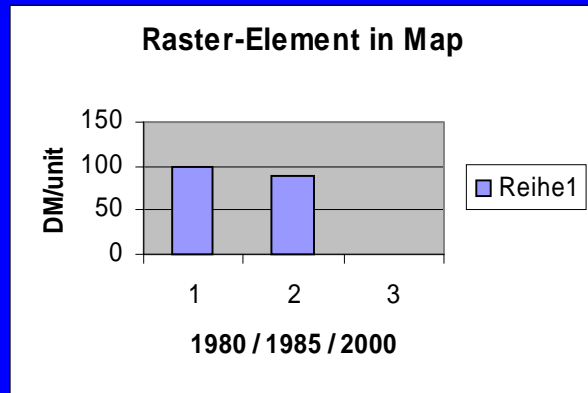# 1.6 The role of the surveying branch in the markets
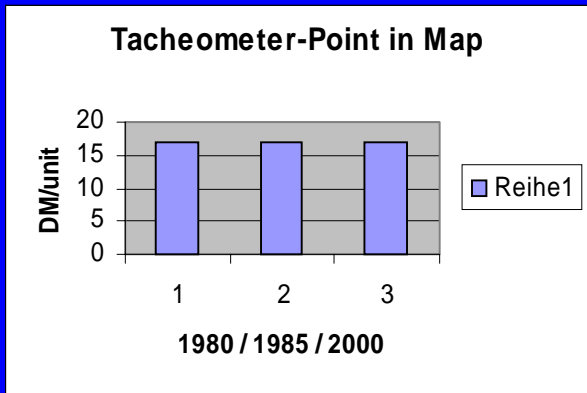
Market	Portion %	Market-Volume [MIO Euro]	Private demand Estimation f.Germany [Mio Euro]
Public surveying world, cadastre	100 %	500	50
Private development/building market:	5 %	2.000	2000
Mapping Industry	40 %	50	50
Other Industry	0,1 %	10	10

1.7 The Change of Market Volumes

- Change by Consumer-/Market Needs
  deep baisse of the construction market in Germany

- Change by better offers:
  i.e. Multipurpose cadastre (an idea for political dispute - not for the competition in the market)

- Change by Technology
  Tacheometer Technology
  GPS - Technology
  CAD - Design -> Vector - Orientation -> Object - Orientation
  Raster / Vector - Technology

Change by cost - relations

Unit	Year 1980	Tech.Progr	year 1985	Tech.Progr	year 2000
Point II.O.	23.000,-	GPS	7.500,-	GPS/Comp.	2.400,-
Control Pt	1.200,-		1.000,-	GPS/Comp.	600,-
Tacheometer Element in map	17,-		17,-		17,-
Raster-Element in map	100,-		90,-	Rastertech-nology	1,-

Pt II.Order

DM/unit

30000
20000
10000
0

1　2　3

1980 / 1985 / 2000

☐ Reihe1

Control Point

DM/unit

1500
1000
500
0

1　2　3

1980 / 1985 / 2000

☐ Reihe1

Tacheometer-Point in Map

DM/unit

20
15
10
5
0

1　2　3

1980 / 1985 / 2000

☐ Reihe1

Raster-Element in Map

DM/unit

150
100
50
0

1　2　3

1980 / 1985 / 2000

☐ Reihe1

middel class wages

DM/month

5000
4000
3000
2000
1000
0

1　2　3

1980 / 1985 / 2000

☐ Reihe1

cost / market volume

TDM

35
30
25
20
15
10
5
0

1　2　3

1980 / 2000 / 2010

☐ Reihe1

New Markets by cost reduction für coordinate element:

Georeferencing

100 DM

1 DM

Costs of a Coordinate

Production & Quality

Market Volume
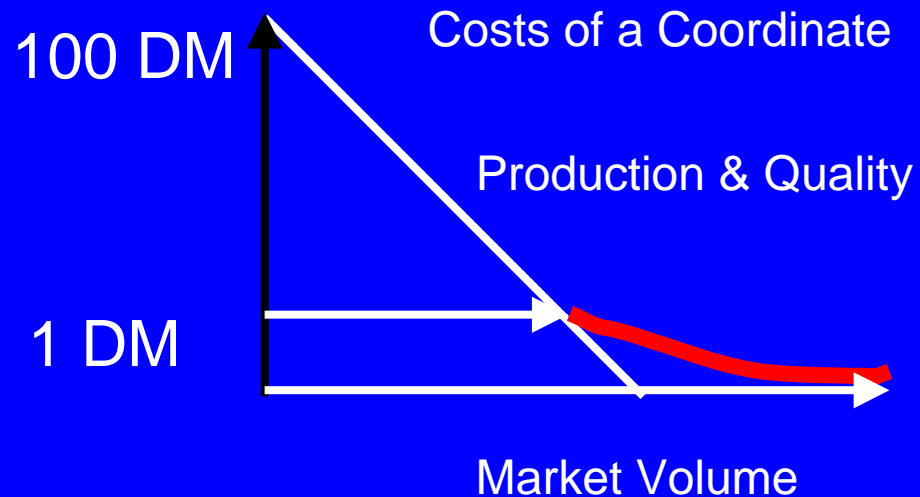
The Market Growth in relation to the price of one coordinate

1.4 Markets in Future

- The markets of the future will always be in a change:

- The Georeferencing market will become bigger, but not quicker than the economical demand. The sector of car navigation shows, that the market outside EU is not as progressive as it should or could be. It is not yet clear, if and when starts the low cost market of the broad economy.

- The development of the DGPS-market has shown, that people have not yet learnt to think in accuracy ranges. The tacheometer-technology is deeply in everybody's (the geodetical experts mind).

- The International infrastructure market will have great benefit from new technologies; The land development will stagnate in EU because of the negative growth of the population.

- But there will be in all old economy sections a greater need of higher quality of data and graphic performance, so that B2B - procurement can take place.

- In many "geodetical factories" people think, that *"having data means being the king!"* But there is no direct experience that this sentence is not true or not.

- True is: Transforming the data for the client's needs - that makes You a king - but only if You understand the needs of Your client very deeply.

- The knowledgeworker of the future as follower of the liberal professionalist will have a lot to do with this sort of dadt processing.

- On the future there is no relying on. We'll see!

2. Needs of Landmanagement and Property Security Systems

2.1 Cadastre for itself?   No!

There is a danger, that the purpose of installing cadastre will not be fulfilled:
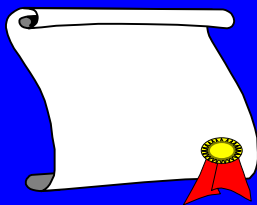
What does it mean, if mortgaging does not start?
Unsufficient Growth of the Economy
Unsufficient Tax income of the state

What does it mean, if landregistration has no practical results ?

Formal Sector   **Informal Sector**

costs

formal acts

2.2 Public Frame, Public Guarantee, Data Protection but low costs.

- by decentralisation of responsibility
- by netwise connected databanks
- by public appointment of privates
- by privatisation
- by public private partnership
- by installation of competition in efficiency
- by privatisation of agencies on time
- by installing anchors deeply in the society
- by associations which form the professions

2.3 What's the wrong way?

- Competition of privates with public agencies
- Occupation of new techniques by state agencies and taxpayers support.
- Total privatisation
- Free admittance to ownership data - a matter of philosophy?
- No Regulation of prices (against Monti's opinion)

2.4 What's the aim?

- Manifold use of land by the economy
- Strengthening of related markets by the quality of the frame
- Small sectors of public employment for public framework
- Absorbing of the informal sector
- **Seamless international service**