Update on the state of the art of the use of GNSS on agriculture and natural resources management

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Just to remind you:

we are mainly users and not experts of GNSS
Natural resources management

- Water
- Forestry
- Wildlife
Precision Agriculture
MONITORING

ANALIZING

RECOMMENDING

ACTING
Precision Agriculture Ideas
Precision Agriculture Ideas
Precision Agriculture Ideas
GNSS in Agriculture
GNSS in Agriculture

Light bars for parallel swathing
Auto guidance
Auto guidance

GPS and gyroscopic
Radio for differential correction with base station
Base station for differential correction
Control on hand and display

AGCO, ConBAP2004
Mapping on sugar cane rows
Major concerns

• Lack of information to users and potential users
  – Few users
  – Misusing available technology

• Few expertise available

• High cost
  – equipment
  – access
  – training

• Availability of augmentation signals
Differential Correction

- Post processing
- Radio on local towers
- Satellite
- Regional broadcasting UHF
- Internal algorithms on receivers (filters)
Accuracy for PA

- Row seeding - 0.1m
- Spraying (light bar) - 0.1m
- Variable rate/herbicides - 1.0m
- Yield mapping - 10.0m
- Variable rate/fertilizers - 30.0m

STAFFORD (1996)
SA Transition -- 2 May 2000

Colorado Springs, Colorado

2 May 2000

SPS CEP AFTER TRANSITION: 2.8 meters
SPS SEP AFTER TRANSITION: 4.6 meters
Some local actions with our involvement

• Brazilian Section of American Chamber of Commerce Workshop “Enhancing Productivity Using the Global Positioning System”, September 13, 2004

• First Brazilian Congress of Precision Agriculture, University of São Paulo, May 17 to 19, 2004

• Training Curse on Precision Agriculture (one week), University of São Paulo, one or two sections per year

• Training Curse on GNSS for Agricultural Applications (one day), University of São Paulo, several section per year.

• Research, testing and development of new applications
Thank you!

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PA Equipment in Brazil

- 100 yield monitors with GPS
- 1200 light bars for ground application
- 900 light bars for airplanes
- 30 VRT vehicles and equipments