Use of EGNOS in precision farming

EGNOS workshop

Rome, Italy

24-25 September, 2019

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CNH Industrial. The biggest company you've never heard of

CNH Industrial, part of the Exor Group, as is the Fiat Chrysler Group.

BASED IN ITALY

WORLD WIDE SCOPE

CNH INDUSTRIAL
Key Figures

One of the largest capital goods companies on the planet

5 GLOBAL SEGMENTS

AGRICULTURE

CONSTRUCTION

COMMERCIAL & SPECIALTY VEHICLES

POWERTRAIN

FINANCIAL SERVICES

12
BRANDS

66
PLANTS

54
R&D CENTERS

$1.1 BILLION
R&D SPENDING

64,625
EMPLOYEES

180
NATIONAL MARKETS

$29.7 BILLION
CONSOLIDATED REVENUES

Note: all figures provided in this presentation are on a US GAAP $ basis and updated at December 31, 2018, unless otherwise indicated

OUR COMPANY: SEGMENTS AND KEY FEATURES

AGRICULTURE

Second largest manufacturer of agricultural machinery

CASE IH AGRICULTURE · STEYR TRACTORS · NEW HOLLAND AGRICULTURE

FINANCIAL SERVICES

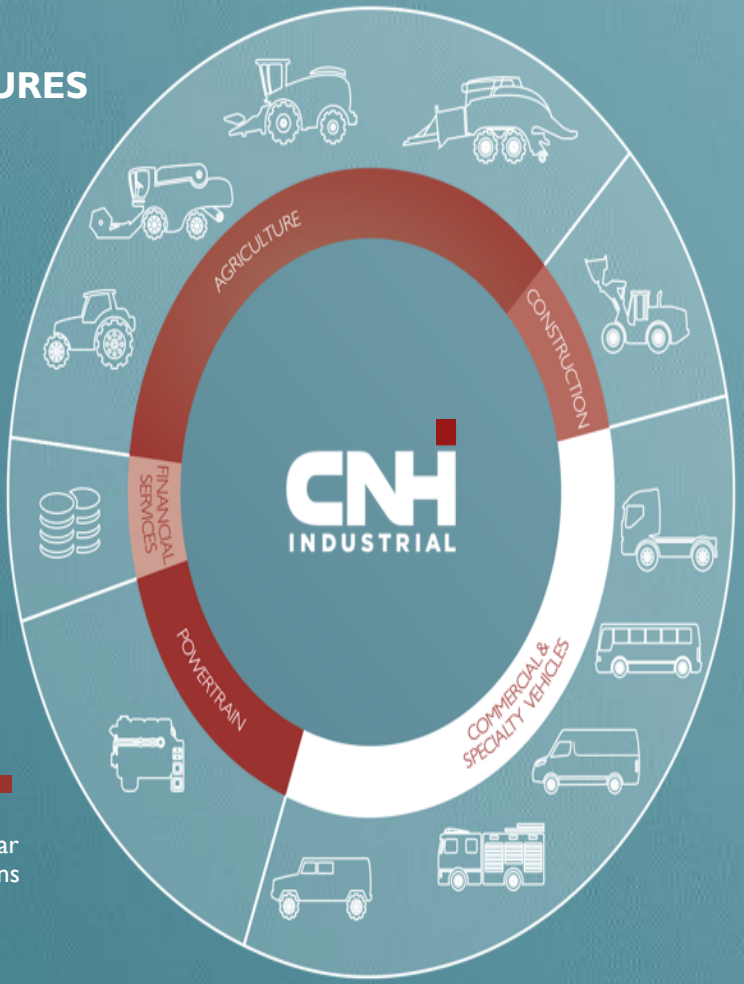
A global leader in equipment finance, supporting customers and dealers with tailor made solutions

CNH INDUSTRIAL CAPITAL

POWERTRAIN

Global number one in highly regulated markets, producing more than half a million engines a year and market leader in alternative fuels powertrains

FPT



CONSTRUCTION

A global player in the manufacturing of construction equipment

CASE CONSTRUCTION · NEW HOLLAND CONSTRUCTION

COMMERCIAL & SPECIALTY VEHICLES

Fifth largest manufacturer of commercial vehicles and the European market leader in natural gas commercial vehicles and buses

IVECO · IVECO ASTRA · IVECO BUS · HEULIEZBUS · MAGIRUS · IVECO DEFENCE VEHICLES

Entry level correction source?

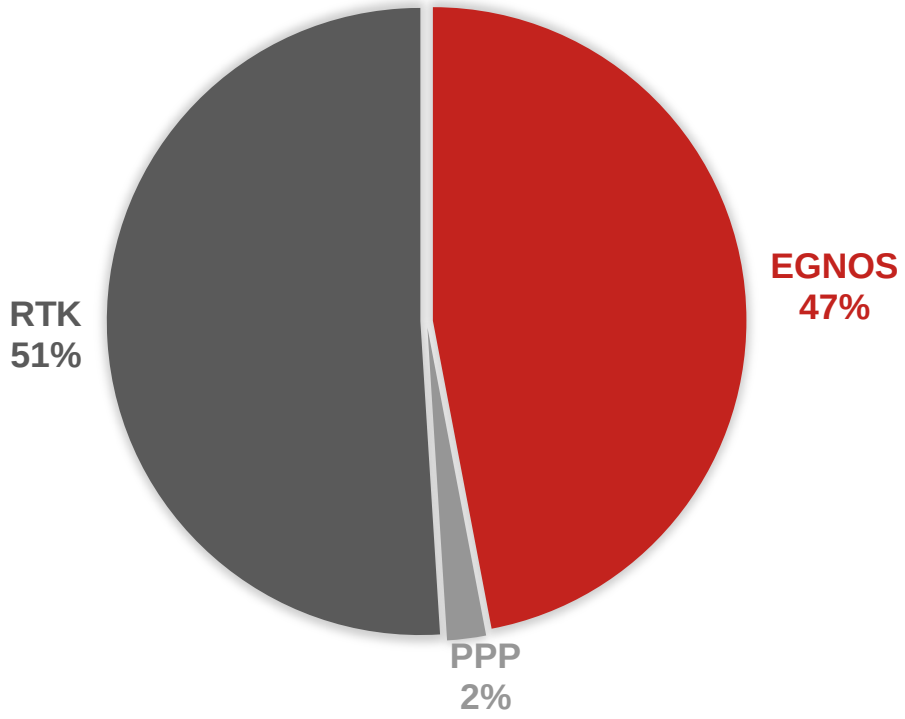
- In the past, many adapters of precision farming started with EGNOS
  - Easy to use
  - No investments needed
  - No subscription fee
  - Accuracy was good enough for most applications

- Nowadays customer immediately choose the right correction signal for job
  - SBAS where lower accuracy is acceptable
  - PPP where high accuracy adds value
  - RTK where high accuracy is mandatory

This cannot work with SBAS

EGNOS still has a high uptake rate

CORRECTION SOURCE USAGE IN EUROPE (CNHI CUSTOMERS)



320.000 CNHi PF systems in the field today

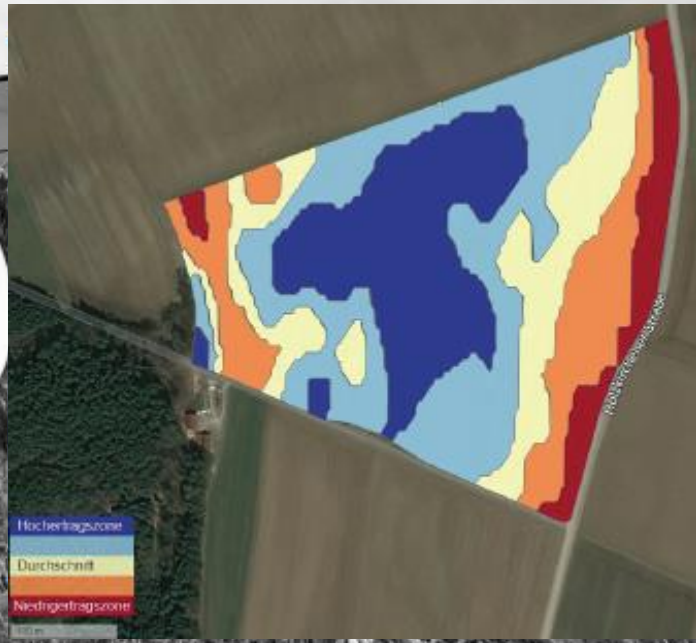
Of which
150.400 using EGNOS

Applications of EGNOS

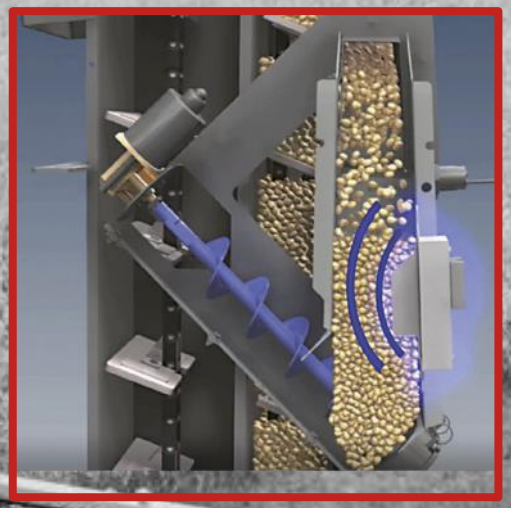
Guided steering on harvesting machines

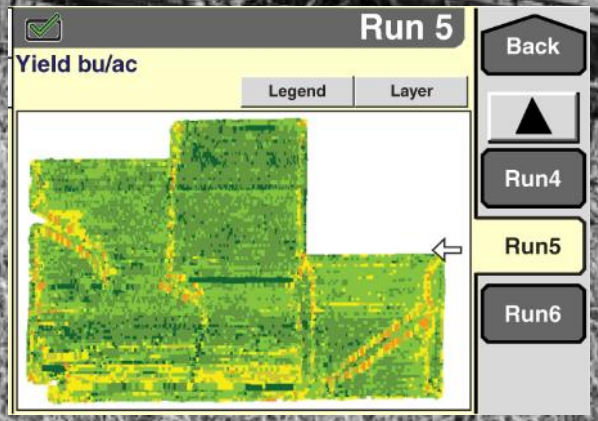
Crop sensing

- Measuring and mapping of
  - Biomass Index
  - Nitrogen Index



Yield and moisture monitoring and mapping





Soil sensing

Rate and section control on sprayers and spreaders

EGNOS is a supported product

- Operators, customers and dealers can call the helpdesk for any questions regarding EGNOS and the use of it.

EGNOS – perception and challenges

- Our EGNOS users find the service to be:
  - + Reliable
  - + Indispensible for their field operations
  - + A valuable contribution in making their farming more productive and sustainable

- However:
  - Changes to the geostationary satellites cause troubles, despite all the efforts of bulletins and newsletters
  - EGNOS is not yet available in Ukraine (Kiev to be deployed as per EU 2017/1406). CNHi is really looking for the EGNOS version in which the station in Kiev is deployed because:
    - ✓ Ukraine is a priority partner for the European Union (EU) (source https://eeas.europe.eu)
    - ✓ Ukraine today possesses arable land area which equals to 30% of arable land of the European Union

Conclusion

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- More than 150.000 CNHi customers are using EGNOS for their field activities and decision making.

- EGNOS is used for different applications today but there still are synergies to be exploited with remote sensing and earth observation.

- Awareness, training and funding on precision farming (in which positioning is a key) will contribute to a more sustainable and competitive European farming.

  Therefore EU relevant stakeholders, from public institutions, industry and farmer associations should commit to achieve this goal.

Questions?