

Agenda

- 1. Introduction
- 2. Types of field operations and their accuracy requirements
- 3. Types of GPS devices for farmers
- 4. Practical tips about using RTK GNSS receiver
- 5. How to achieve the highest accuracy with RTK GNSS receiver for each field operation

Introduction

FieldBee - app based tractor navigation solutions. High precision at an affordable price. Created together with farmers for farmers!



350K+

App downloads

50+

Countries

3K+

Clients

40+

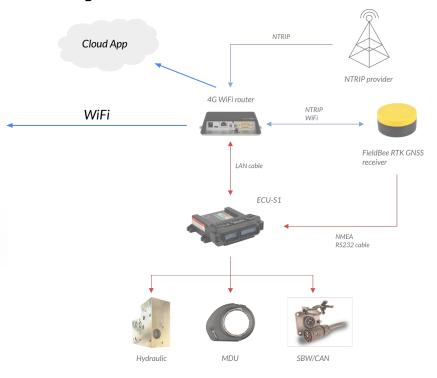
Employees



FieldBee tractor GPS system



FieldBee tractor GPS system that uses smartphones and an Internet of Things (IOT) architecture, making the solution affordable, updatable and modular.





Field operations overview



| Operation | Minimal accuracy | |
|-------------|------------------|--|
| Tillage | 10 - 20 cm | |
| Sowing | 5 cm | |
| Cultivation | 5 cm | |
| Spreading | 30 cm | |
| Spraying | 4 cm – 50 cm | |
| Harvesting | 5 cm | |



Without GPS

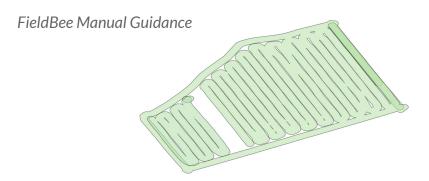


| Operation | Accuracy (based on driver experience) | | |
|-------------|---------------------------------------|--|--|
| Tillage | Only during the day | | |
| Sowing | Only during the day | | |
| Cultivation | Risks to cut crops | | |
| Spreading | Easy to do 2x overlaps | | |
| Spraying | Big overlaps before tram lines | | |
| Harvesting | Less effective | | |



Manual Guidance with EGNOS





Recorded track (with Manual Guidance)

| Operation | Accuracy (20 – 30 cm) | |
|-------------|-----------------------|--|
| Tillage | 10 - 20 cm | |
| Sowing | 5 cm | |
| Cultivation | 5 cm | |
| Spreading | 30 cm | |
| Spraying | 4 cm – 50 cm | |
| Harvesting | 5 cm | |



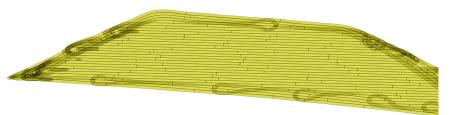
Autosteer system*





Mechanic Autosteer kit

Hydraulic Autosteer kit



Recorded track (with Autosteer System)

| Operation | Accuracy (1 – 2 cm) | |
|-------------|---------------------|--|
| Tillage | 10 - 20 cm | |
| Sowing | 5 cm | |
| Cultivation | 5 cm | |
| Spreading | 30 cm | |
| Spraying | 4 cm – 50 cm | |
| Harvesting | 5 cm | |

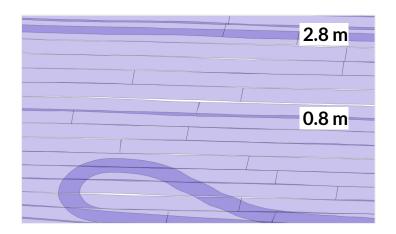
*Hands-free driving



Manual vs Autosteer system

- High concentration
- Simple to do mistake

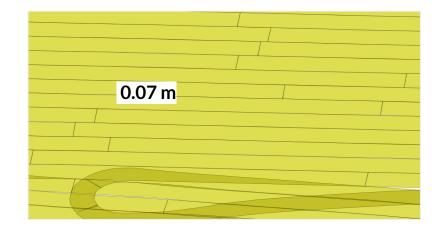




Recorded track (Manually)

- Hands free
- Regular accuracy





Recorded track (Autosteer system)



Field operations summary

| Operation | Manual driving (based on driver experience) | Manual Guidance (20 – 30 cm) | Autosteer System (1 – 2 cm) |
|-------------|---|---------------------------------|--------------------------------|
| Tillage | Only during the sun day | 10 - 20 cm | 10 - 20 cm |
| Sowing | Only during the sun day | 5 cm | 5 cm |
| Cultivation | Risks to cut crops | 5 cm | 5 cm |
| Spreading | Easy to do 2x overlaps | 30 cm | 30 cm |
| Spraying | Big overlaps before tram lines | 4 cm - 50 cm | 4 cm - 50 cm |
| Harvesting | Less effective | 5 cm | 5 cm |

How to achieve the highest accuracy with RTK and EGNOS

Ultimate solution to achieve high-accuracy

Get RTK correction from

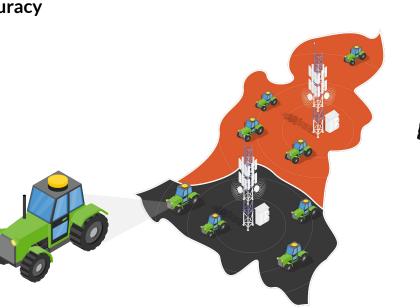
- NTRIP providers
- Base stations

Accuracy with RTK correction is about 1 cm

Additional price for Unlocks and RTK signal can be charged

FieldBee

- Compatible with NTRIP
- Base one time payment







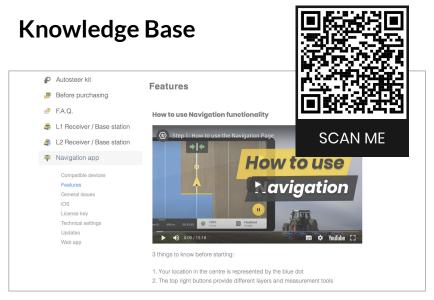
Sowing (poppies) Use Case

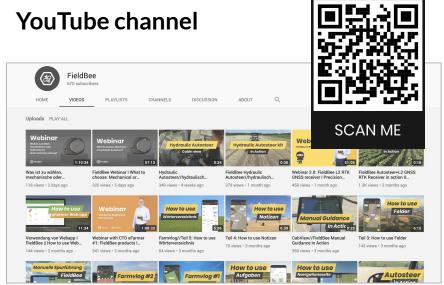


(Mechanical Autosteer)



Where to find more info?









Thank you!

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