




PRO
BARIN SPORTS



Our mission is to provide the most
integrated real-time AI-driven multi-sport
athlete performance tracking system in pro sports

Real-time

Live data and actionable insights to support evidence-based coaching and game management

Integrate: system

Fully mobile with private cloud and autonomous offline operation

Integrate: data

Entire player-tracking history and ability to receive input from other data sources



Artificial Intelligence

To unlock the full potential of our data through pattern recognition and predictive analytics

Multi-sport

Smooth system adaptation across sports with player customization

Barin Pro Gen 3



GPS
Glonass
Beidou

Cloud Data Back-up
(optional)

Proprietary
radio protocol

Secure wi-fi

Base station is private cloud
in-hand & functional offline

Tablet for real-time
visualization & analytics

Match-box sized
device and heart rate
monitor



Barin Pro Gen 3



Where we are now **Barin Pro Gen 3**

Performance

Speed
SpeedAVG
SpeedMAXX
Total Energy Expenditure
Metabolic Power
Dynamics Indicator
Anaerobic Index
Count Sprints
Count Accelerations
Count Decelerations
Change Direction Left
Change Direction Right
Work Ratio
Distance in speed zone 1
Distance in speed zone 2
Distance in speed zone 3
Distance in speed zone 4
Distance in speed zone 5
Total Distance
Equivalent Distance
High Metabolic Load Distance
Last Sprint Distance

Condition

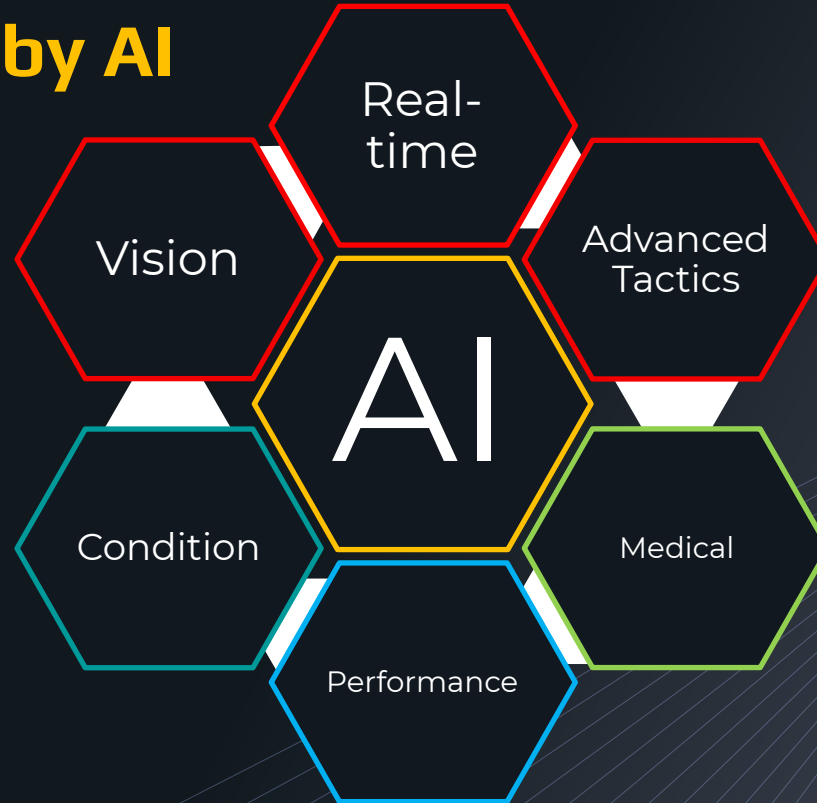
HR
Average HR
HR Zone 1
HR Zone 2
HR Zone 3
HR Zone 4
HR Zone 5
Recovery Time
Recovery Time Top
Heart Exertion

Tactics

Distance between players
Distance between lines
Squad length
Squad width
Heatmap
Thirds
Formations
Goals Scored
Goals Conceded
Yellow Card
Red Card
Starting 11
Tactical Formation

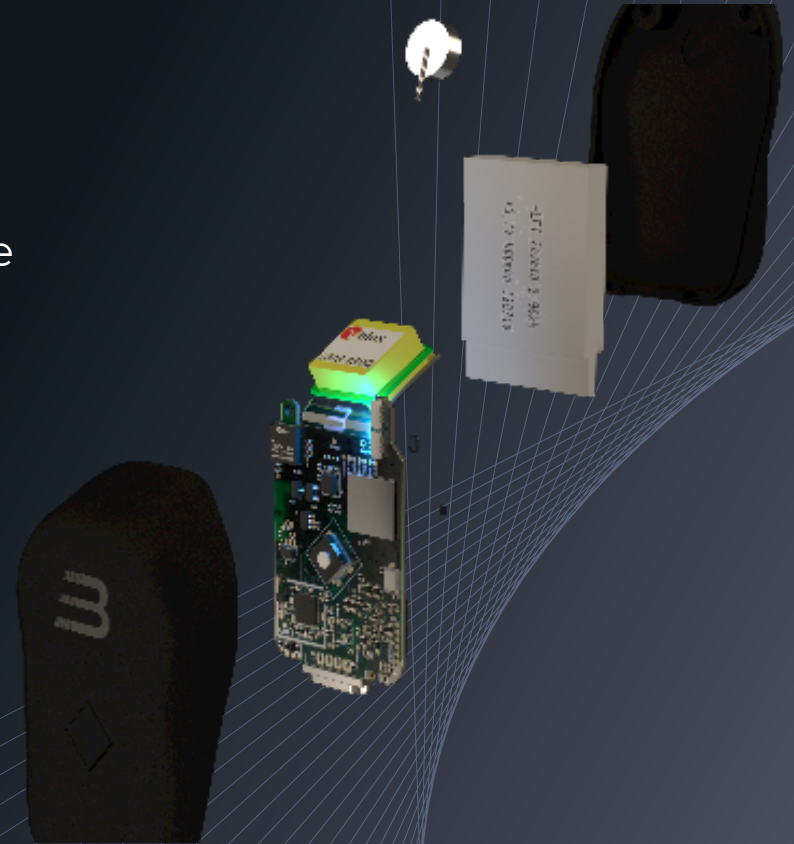
Our goal 360° Sports Team Management...

Powered by AI

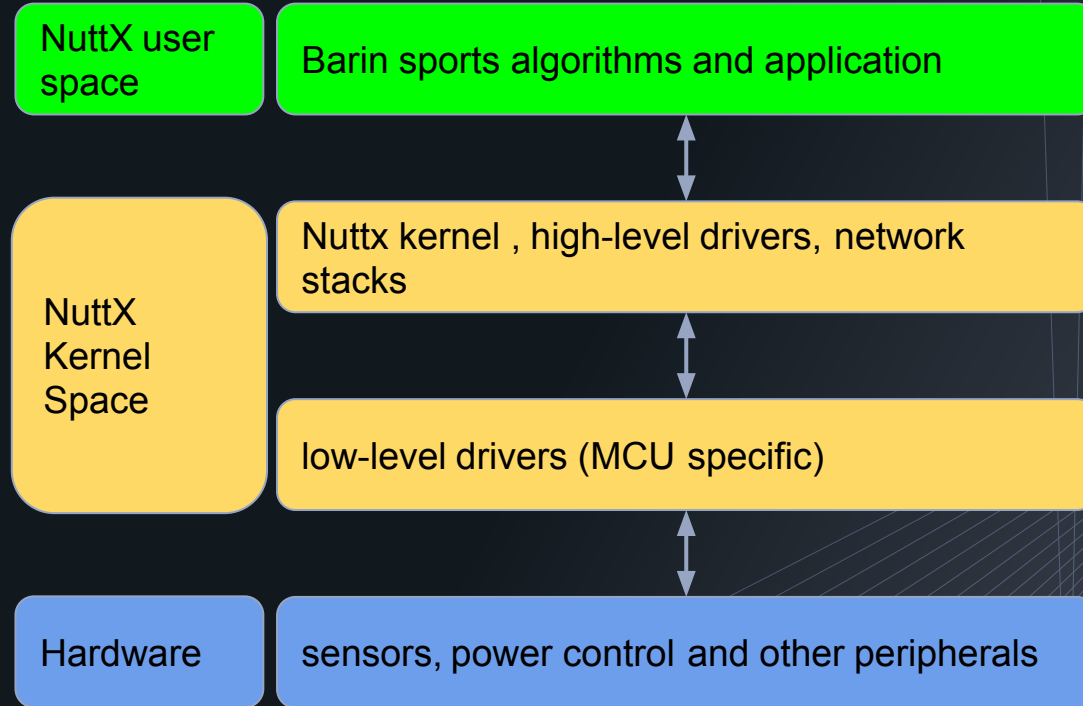


Remote Unit

- 9 axis inertial measurement unit
- precise GPS module
- proprietary long range radio module
- wifi and bluetooth module
- up to 32 GB embedded memory
- i.MX RT MCU
- powered by **NuttX**



Remote Unit software organization



Why NuttX?

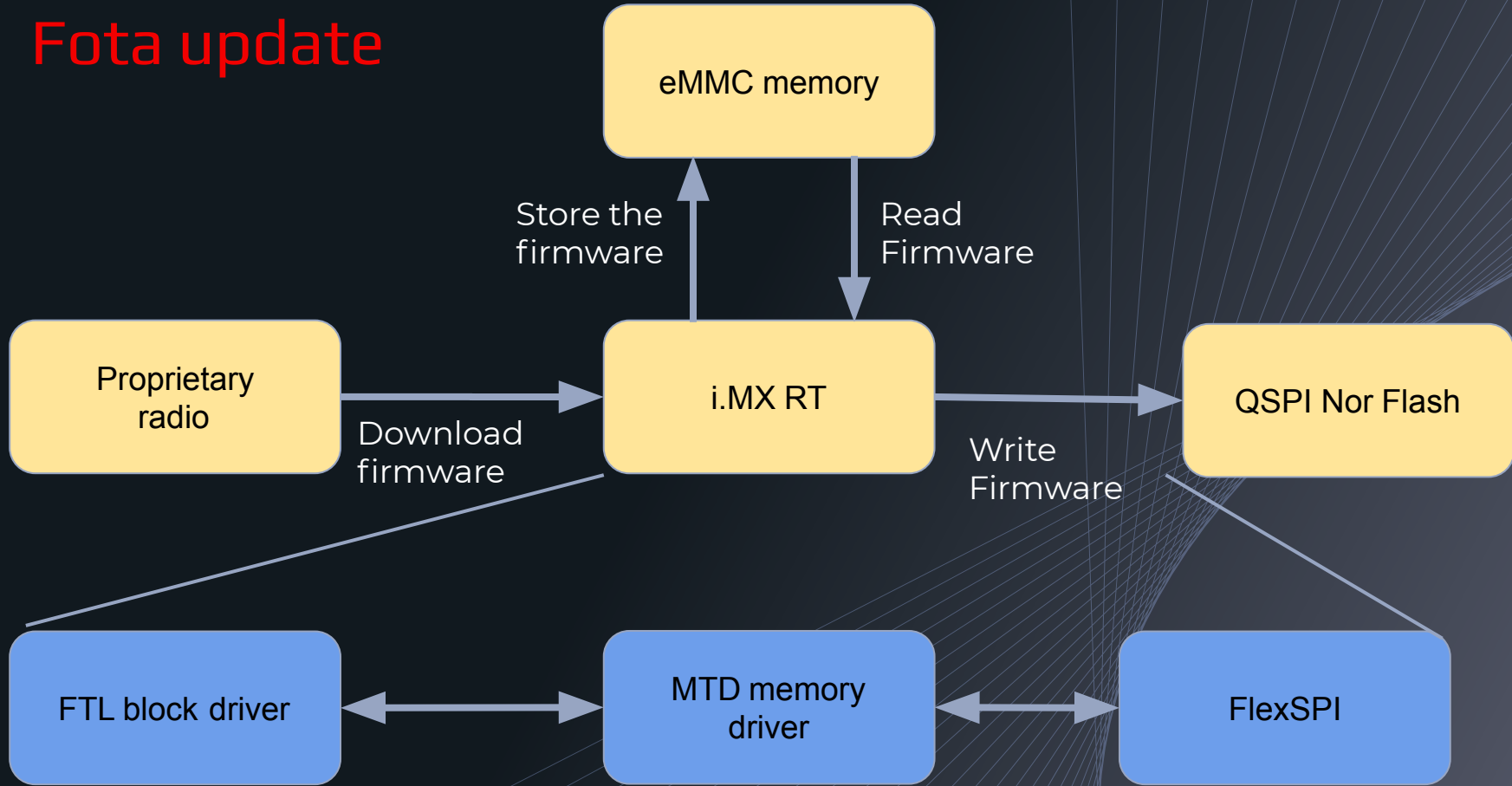
- easy and well know application development (very similar to linux)
- many supported features as file systems, network stacks, external memories and others
- application portability to different MCU (supported by NuttX)
- easy application porting from Linux to NuttX



Challenges which we faced

- Creating initial port for new MCU in NuttX (i.MX RT) - **Special thanks to Mr. Gregory Nutt for his help in the initial port and to all other developers which work on the support of i.MX RT family**
- writing the required low-level drivers

Fota update



Ongoing contributions

- MTD driver for IS25LP128 QSPI NoR Flash
- FlexSPI driver for i.MX RT
- Add support for fast mode operation for eMMC memories MMC 4.5 standard
- Implement dynamic clock change algorithm based on CPU load
- Libraries and APIs for Artificial intelligence

Thank you very much!

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