CSR

Push every boundary.™

CSR – Indoor Location

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About CSR

CSR

CSR is a $1B market leader in connectivity, location and audio technology

Indoor Location: The infrastructure question

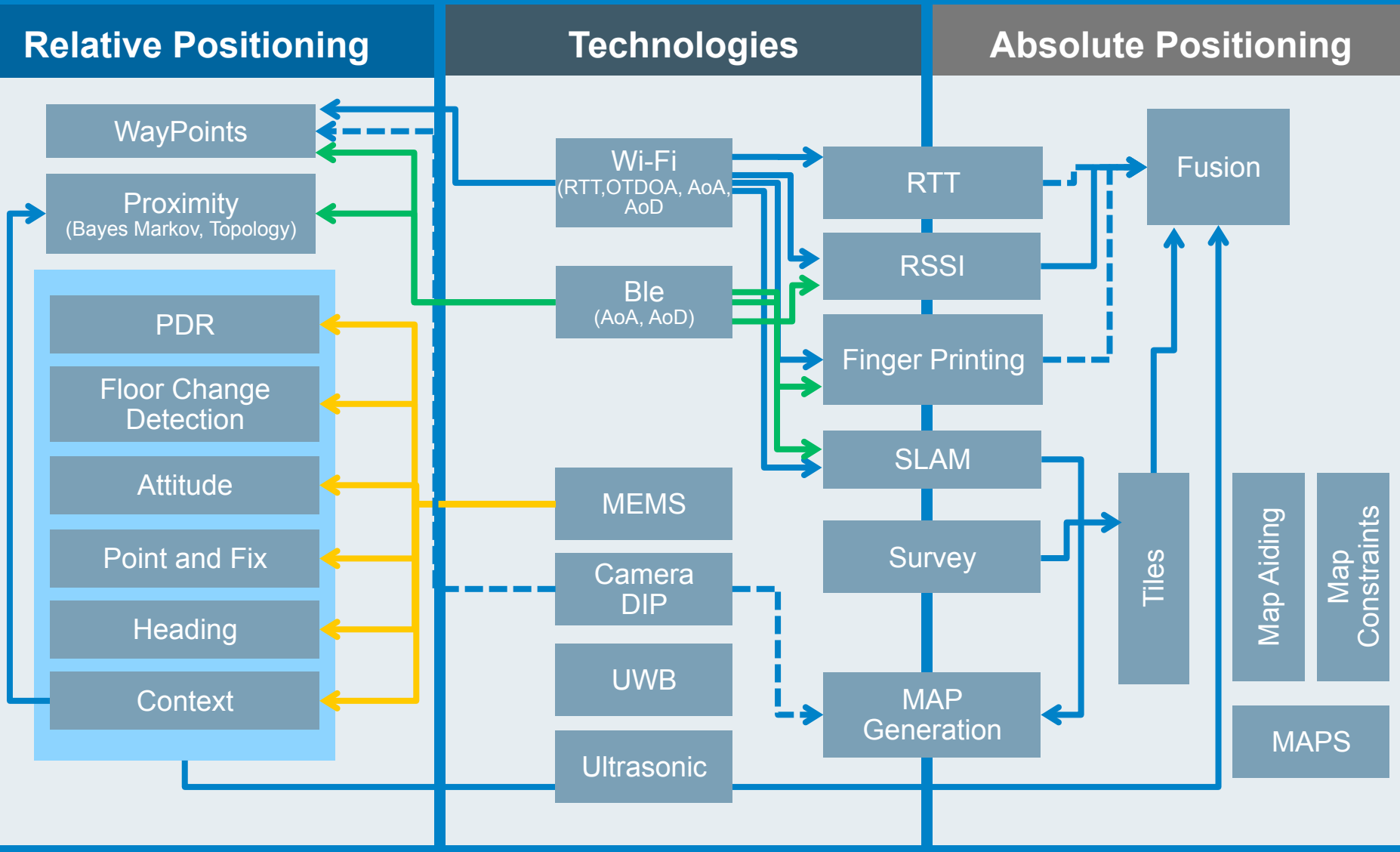
Existing Infrastructure Sufficient

- Fusion of WiFi, MEMS & GNSS
- Crowd sourced, 5m typical accuracy
- Fast deployment in application space

New Infrastructure Required?

- Beaconing using encrypted BT Smart, augments WiFi positioning
- Other alternatives; Visible light, Audio, Dedicated wideband tracking hardware

Indoor Location: Technology Landscape



Complex, fragmented technology and market

Indoor Location: The Next Big Thing

CSR

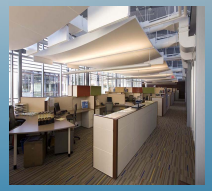
Smart Building Office Automation

Advertising and Marketing

Retail

Smart IT BYOD

Healthcare



Inventory Asset, People Tracking

So Many Vertical Markets—So Many Applications

- Proximity, Location or Navigation?
- Scalability to new technologies?
- Accuracy?
- What Are We Positioning: People, things, assets, specialized?
- What can be done with the existing infrastructure?

Bluetooth SMART

Wi Fi

Dedicated Beaconing

MEMs Sensors

UWB

Ultrasonic

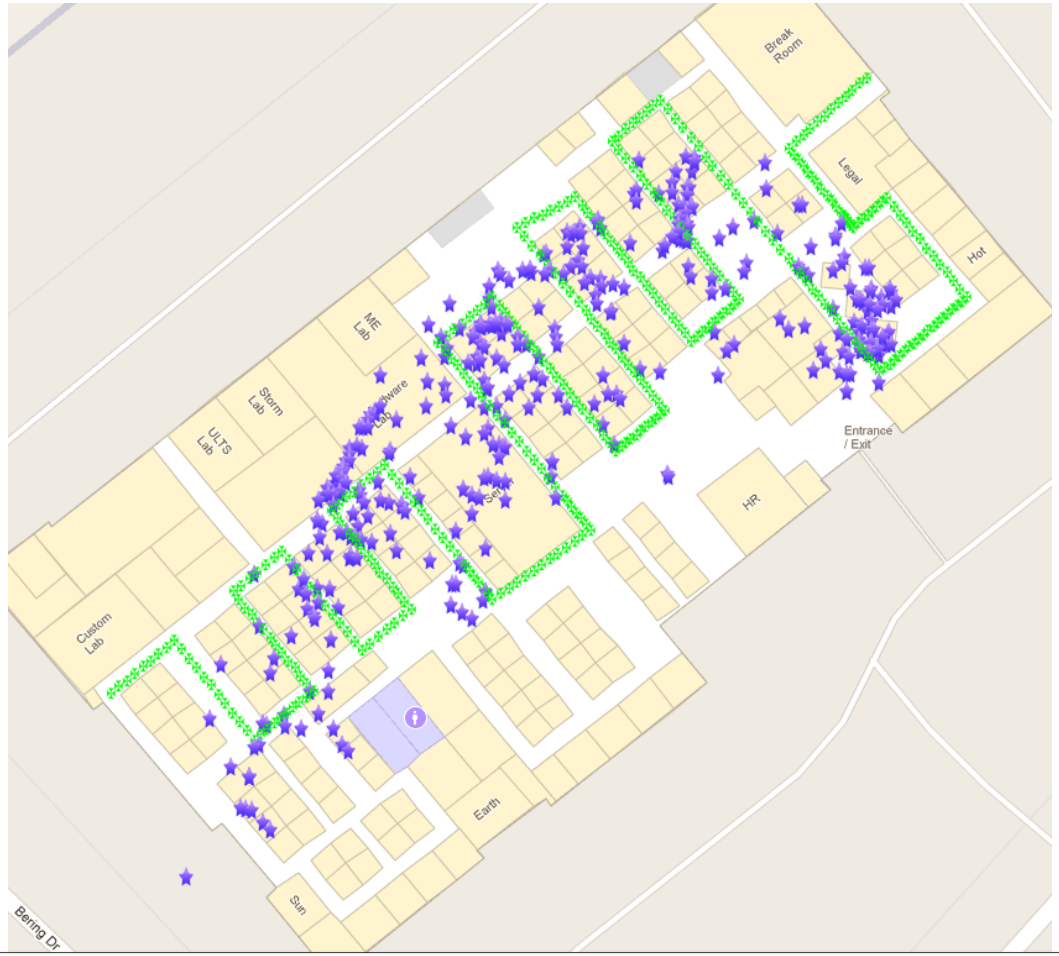
Cameras

Why is Fusion required?

Magnetic anomaly

Pedestrian DR has uncontrolled long term errors

Why is Fusion required?



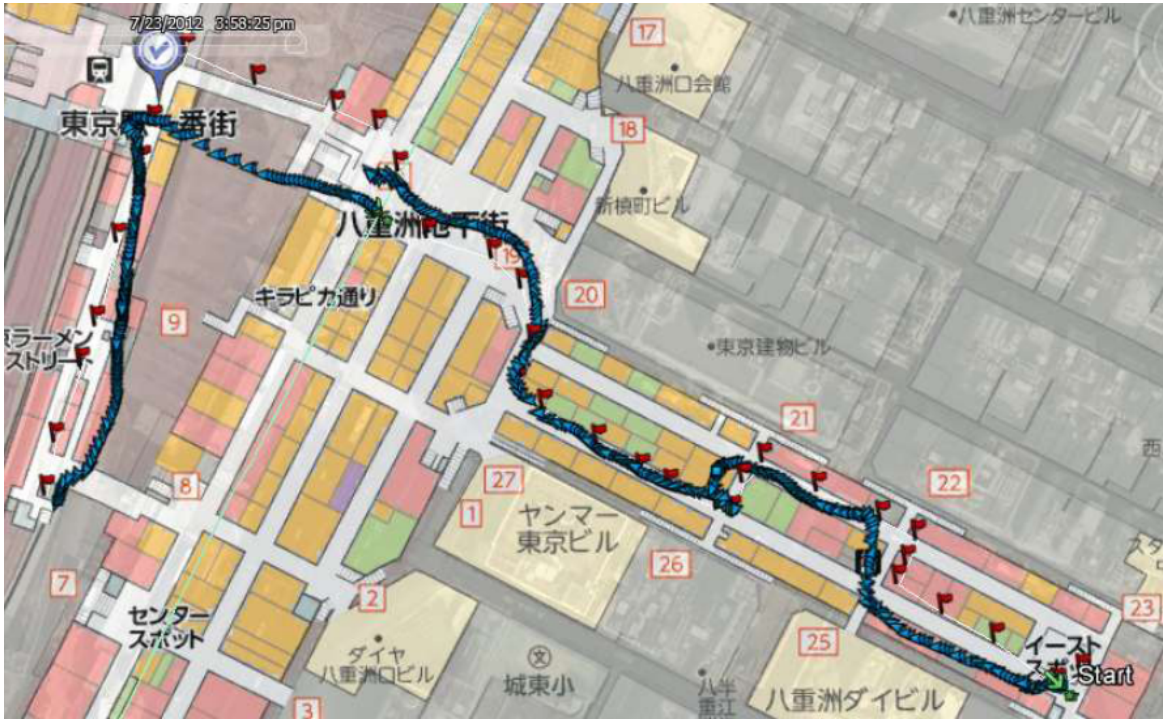
WiFi has position jitter, but controlled long term errors

Combine WiFi with Pedestrian Dead Reckoning

Fusion = High quality positioning with smooth trajectories

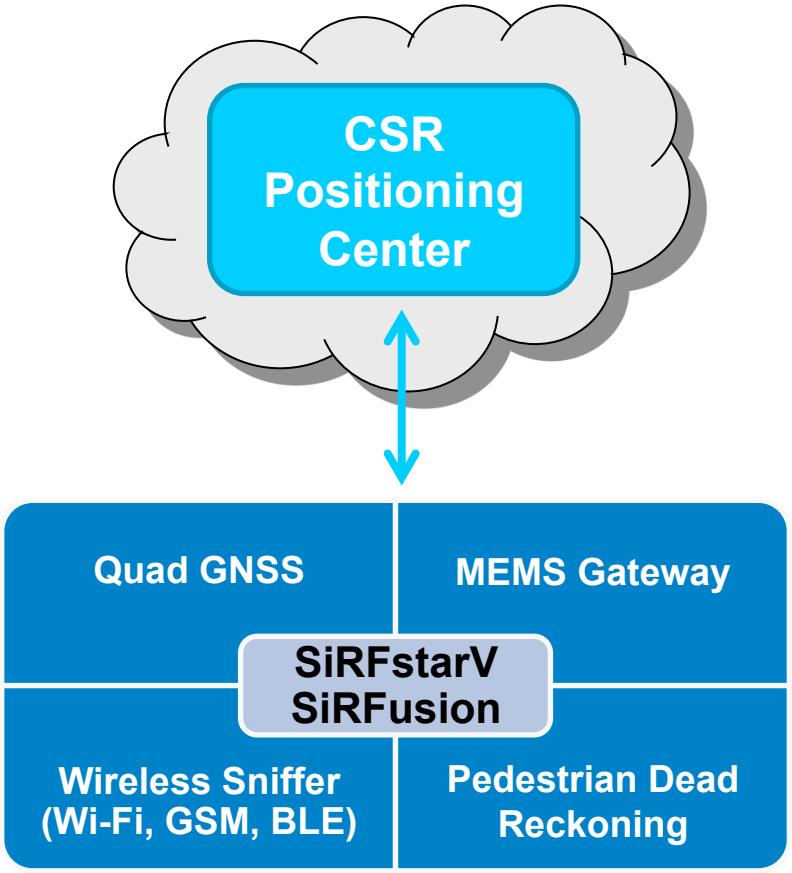
SiRFusion test – Tokyo Station

- Lower level at Tokyo station
- Google indoor maps for each level
- No GNSS available
- Red flags mark the route walked
- Blue dots mark the SiRFusion position
- Largest error 7 meters, typical < 5 meter



SiRFusion Location Platform

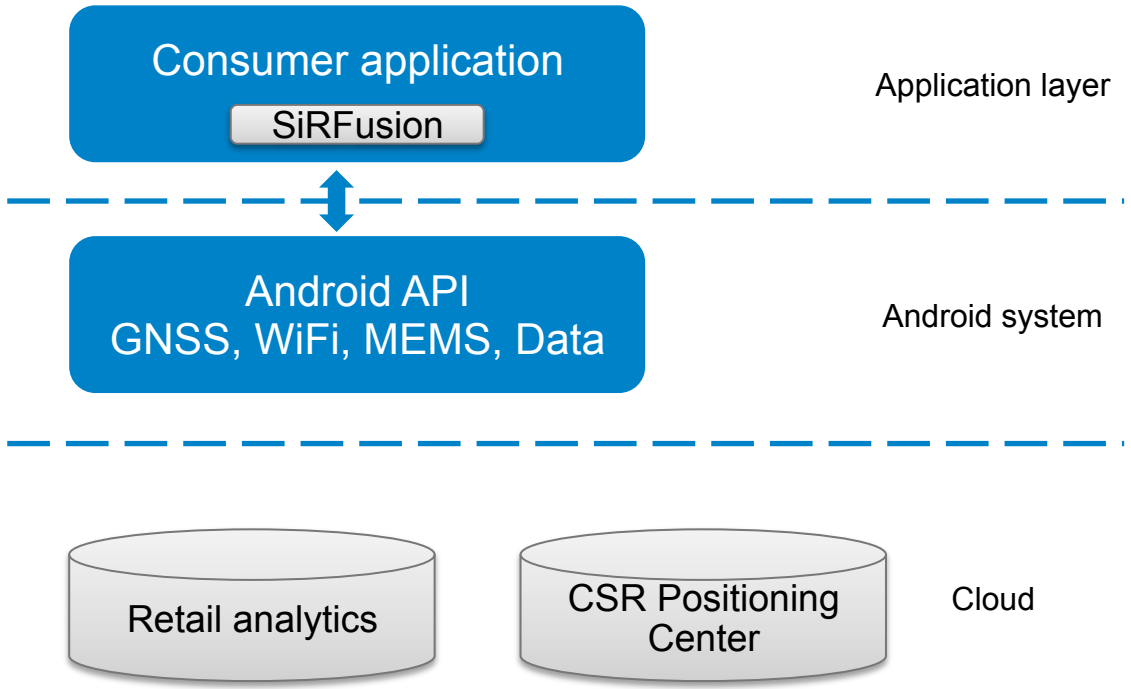
SiRFstarV™ architecture with **SiRFusion™** hybrid positioning system



- Zero install indoor location solution
- Requires no new infrastructure installing
- Scales globally
- Only vendor with all required technologies in one solution
- Fusion framework supports infrastructure positioning if available

Available as Silicon or Software only solution

Implementing SiRFusion in Android



- Supplied as a library for embedding inside application
- Will enable location of consumer on app, understanding of consumer flow through outlet and related analytics
- May require augmentation with beacons to meet higher accuracy requirements

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