Quantum AI Navigation System: Terrestrial + Space Architecture

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GLOBAL QUANTUM NAVIGATION NETWORK
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                v
  Quantum Beacon Layer (Space Anchors)
  - Entangled Pairs (Q-anchors)
  - Lagrange Points / Orbital Stations
  - Time-bin & Memory Markers
                |
                v
  Pulsar Timing Layer (Celestial Beacons)
  - Pulsar Receivers (XNAV)
  - Quantum Atomic Clock Sync
  - QAI Pulsar Pattern Recognition
                |
                v
  Gravitational & Magnetic Mapping Layer
  - Quantum Gravimeters / Magnetometers
  - Gravity "Fingerprint" Terrain Maps
  - QAI Matching & Terrain Re-identification
                |
                v
  Quantum Inertial Navigation Core (Q-INS)
  - Cold Atom Accelerometers & Gyroscopes
  - Sagnac Interferometry (Rotation)
  - AI Correction (Drift/Noise Compensation)
                |
                v
  Time Reference & Sync Layer
  - Time Crystals / Optical Lattice Clocks
  - Time-bin Encoded Photons
  - QAI-managed Clock Drift Correction
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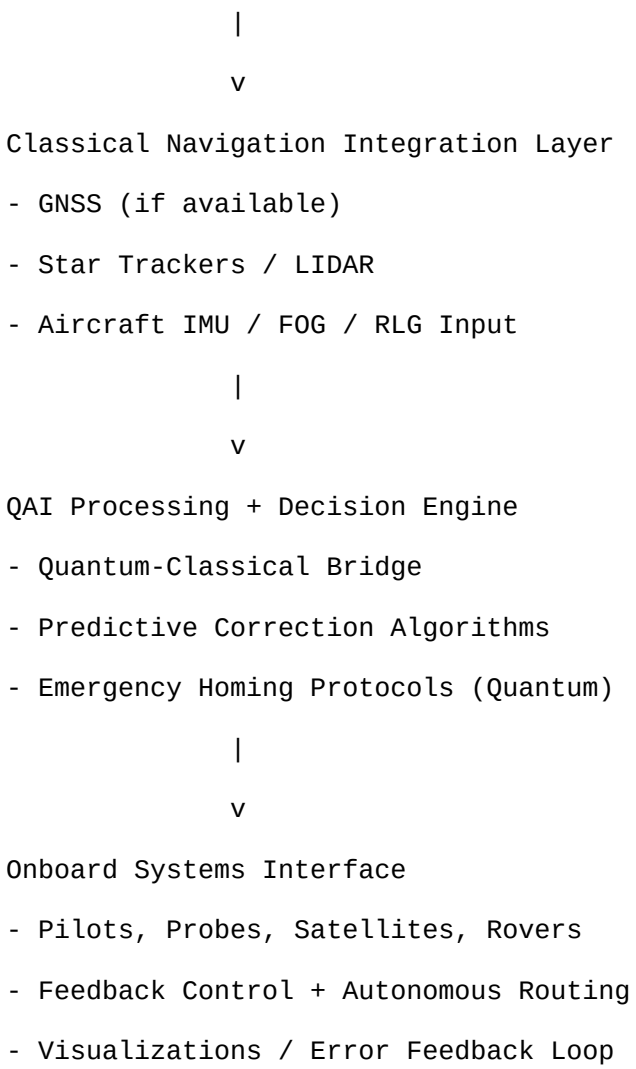
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v
Classical Navigation Integration Layer
- GNSS (if available)
- Star Trackers / LIDAR
- Aircraft IMU / FOG / RLG Input
|
v
QAI Processing + Decision Engine
- Quantum-Classical Bridge
- Predictive Correction Algorithms
- Emergency Homing Protocols (Quantum)
|
v
Onboard Systems Interface
- Pilots, Probes, Satellites, Rovers
- Feedback Control + Autonomous Routing
- Visualizations / Error Feedback Loop