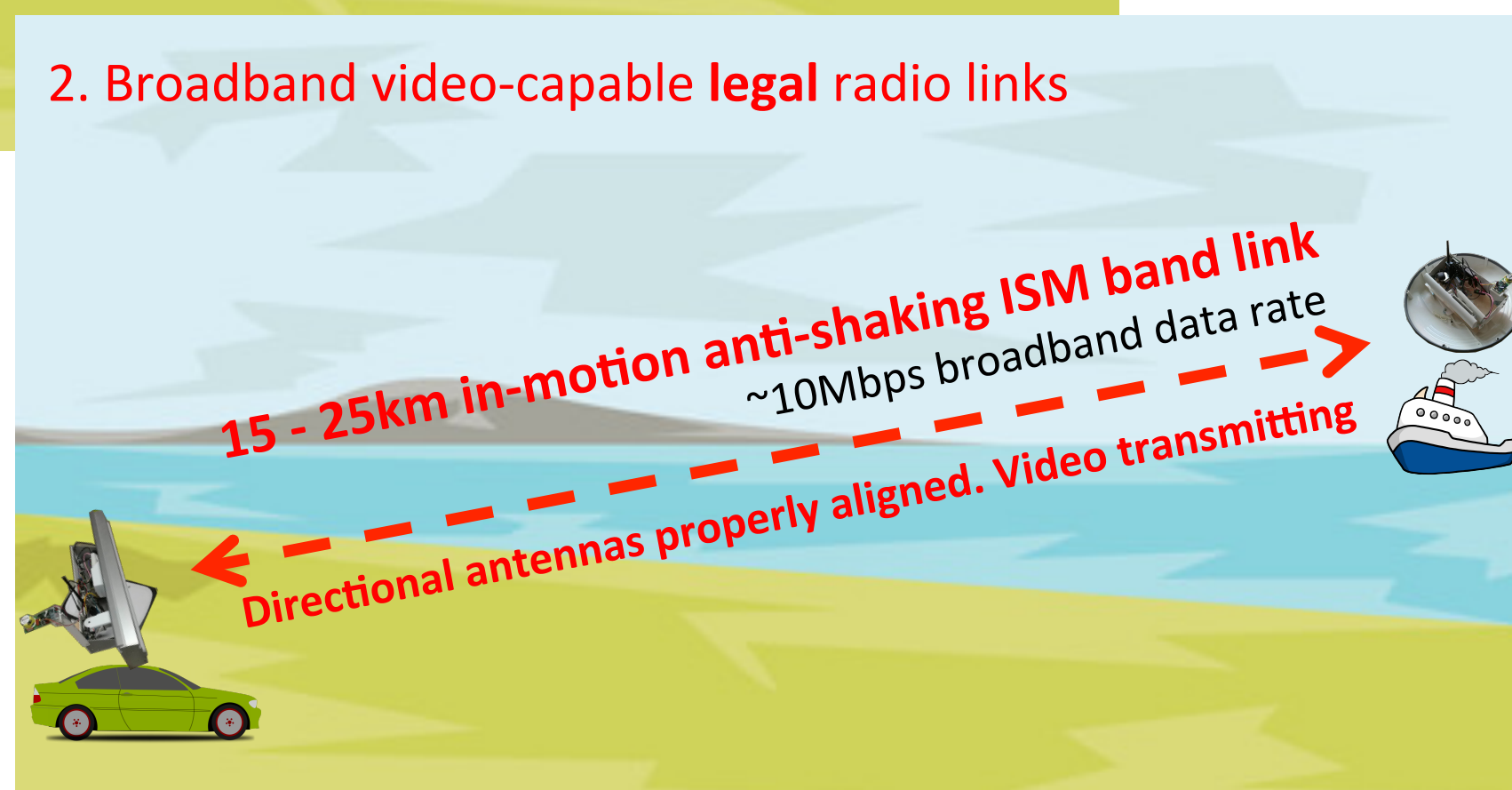
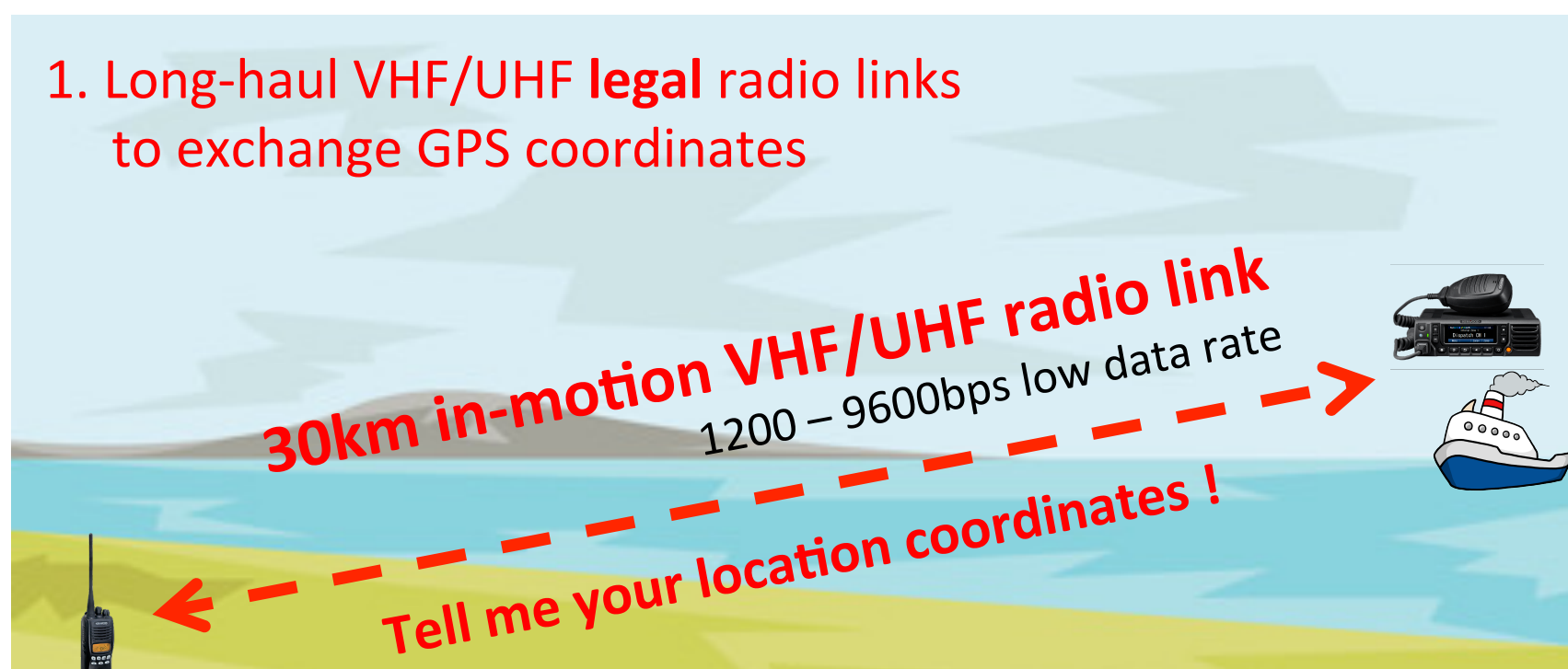
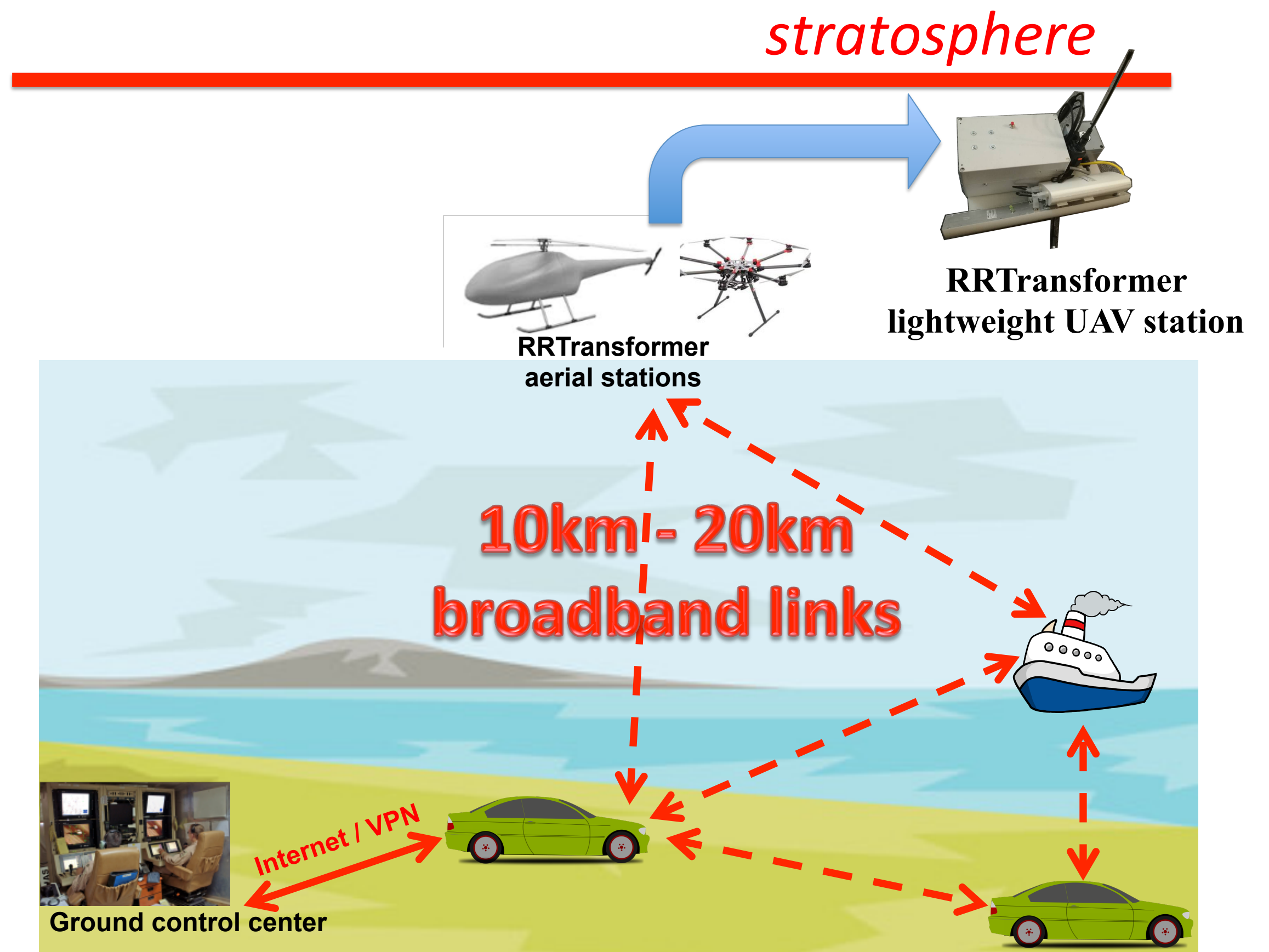


Radio Rate Transformer: A Portable VHF/UHF and Gigahertz Radio Combo Providing Broadband Ad-hoc Networking Services to Mobile Vehicles



Dr. Jiejun James Kong
Turing Network Test L.L.C.

- High-speed **broadband** ad-hoc network link at 10km/20km per hop anywhere anytime above surface and below stratosphere
- **Portability:** can be enclosed in 18-in, 24-in or 36-in radomes, weight range 6 lb. to 40 lb.
- **Legal** RF transmission: fully compliant to FCC 47 rules



VHF/UHF radio subsystem

- Large-power omni-directional low-rate communication to exchange meta-information such as GPS coordinates

Broadband radio subsystem

- Anti-shake directional broadband communication resistant to unbounded yaw-rotations, up to $\pm 60^\circ$ pitch-rotations and roll-rotations
- Fixed base stations work as “fixed RF source”
- Mobile vehicle could work as “temporary fixed RF source” if only transmitting when stopped; or stick to FCC rules 36 dBm (4 watts) $EIRP = 30\text{ dBm}$ (1 watt) transmitter power + 6 dBi antenna gain

