

Ray Tracing based propagation channel simulator

Roxana Burghelea, Bernard Uguen, Stéphane Avrillon

`roxana.burghelea@univ-rennes1.fr`

General context

• Different RATs (Radio Access Technologies)

- ✓ GSM, UMTS, WiFi...
- ✓ UWB, 4G, MIMO system, ZigBee...

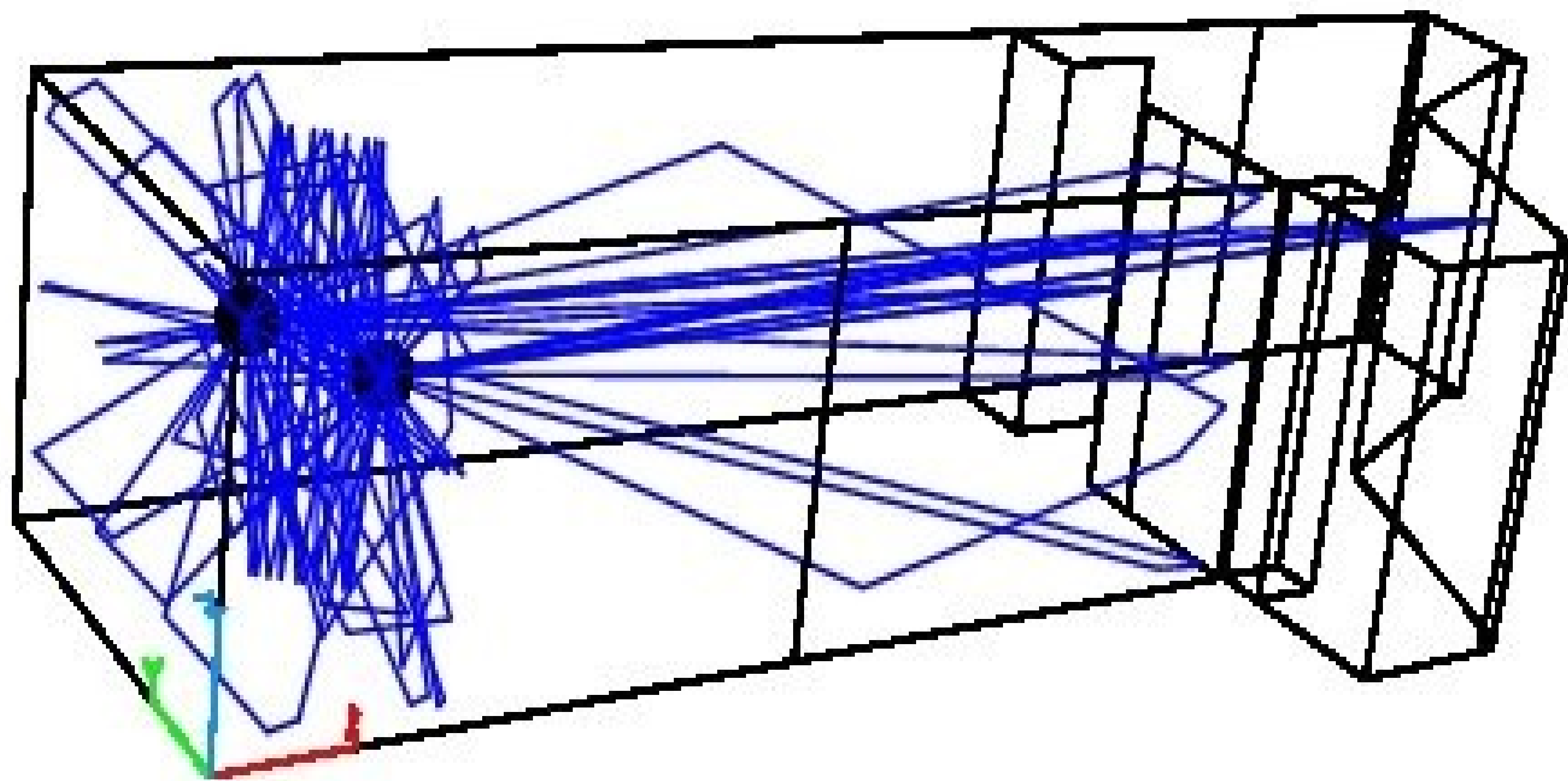
• Applications

- ✓ Communications
- ✓ Wireless Sensor Network
- ✓ Navigation



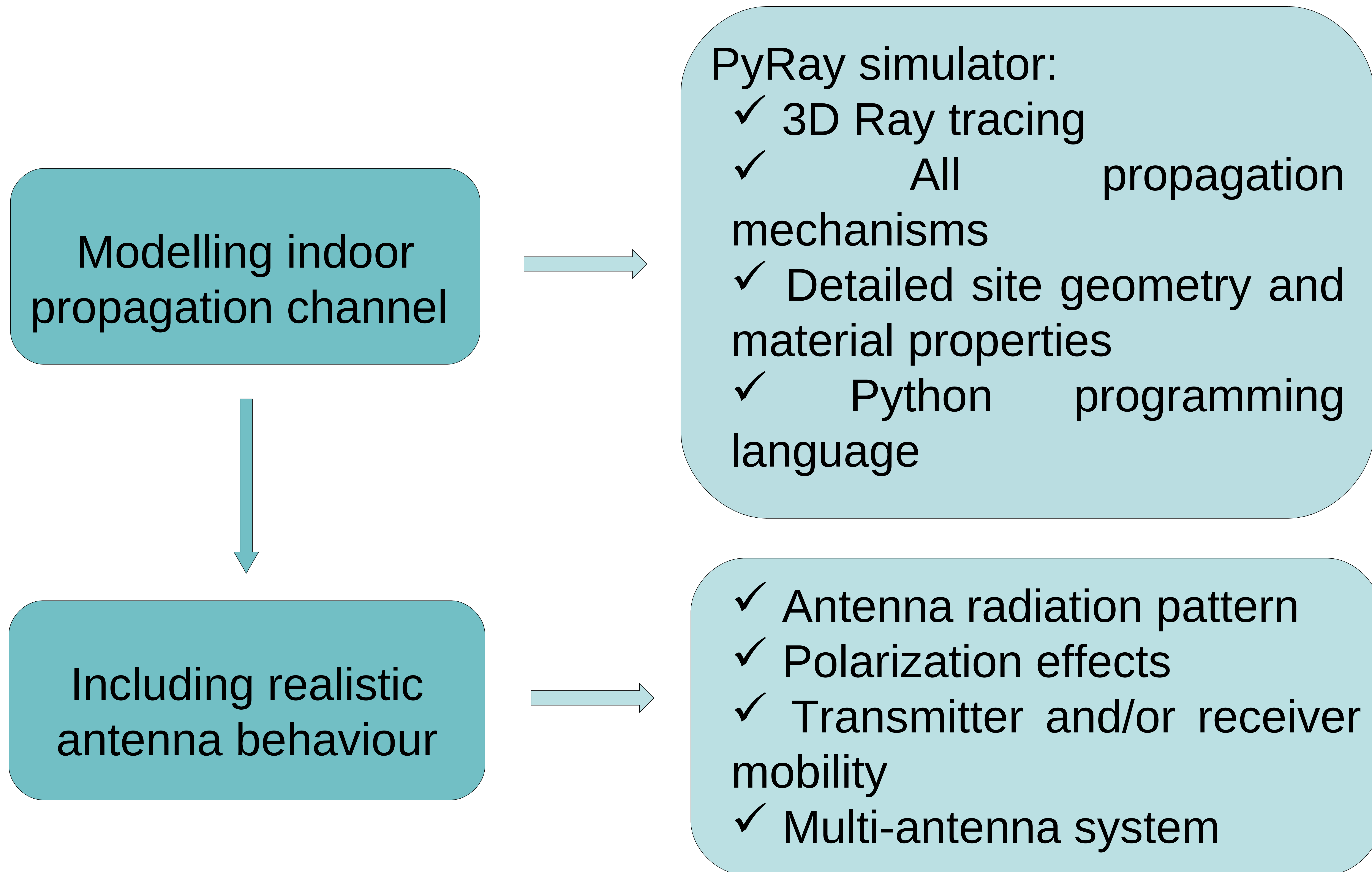
Objectives

- ✓ to develop a heterogeneous RAT simulator (PyRay) which allows radio wave propagation modelling within typical indoor environments

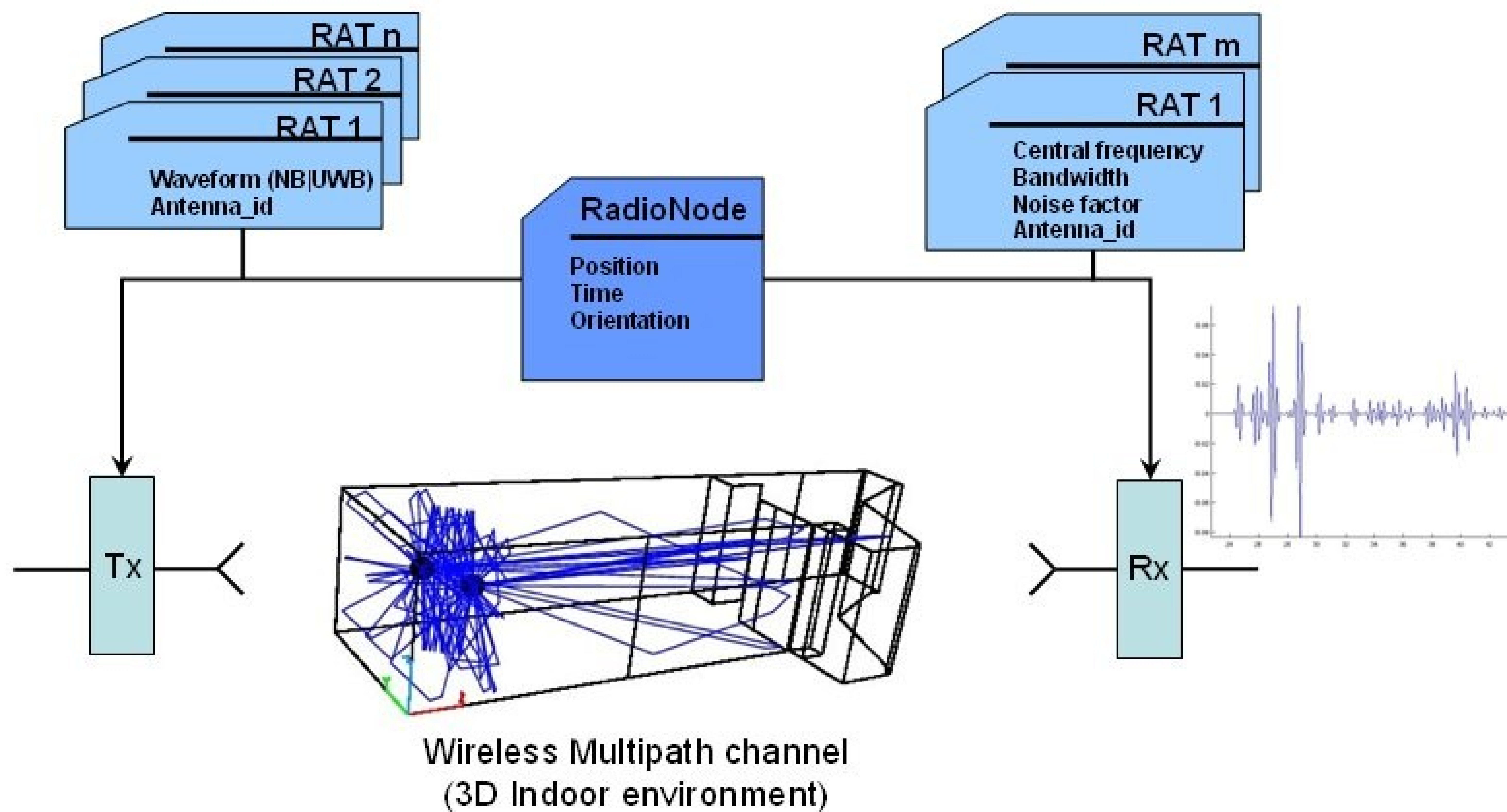


Example of 3D Ray tracing in indoor configuration

The research program



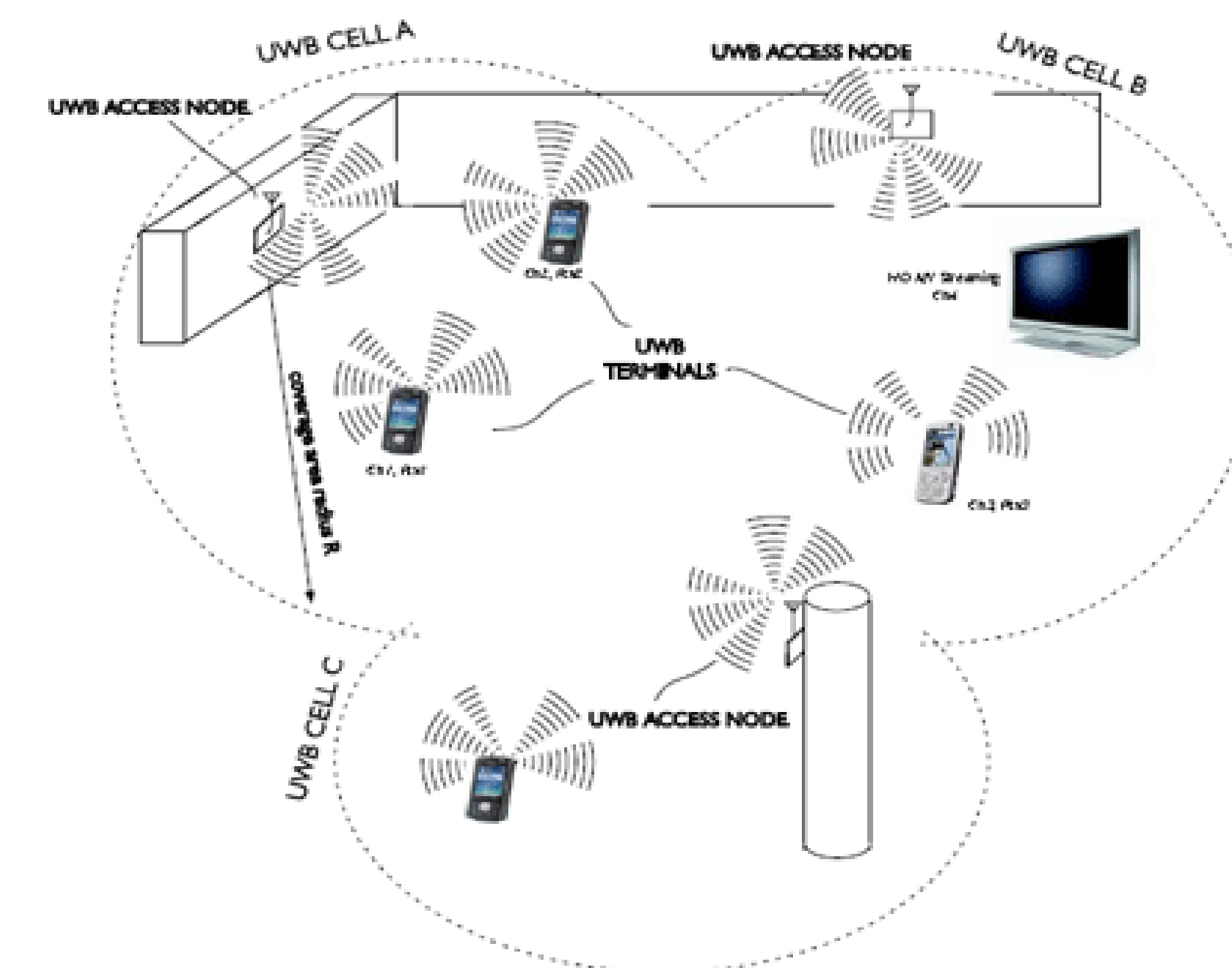
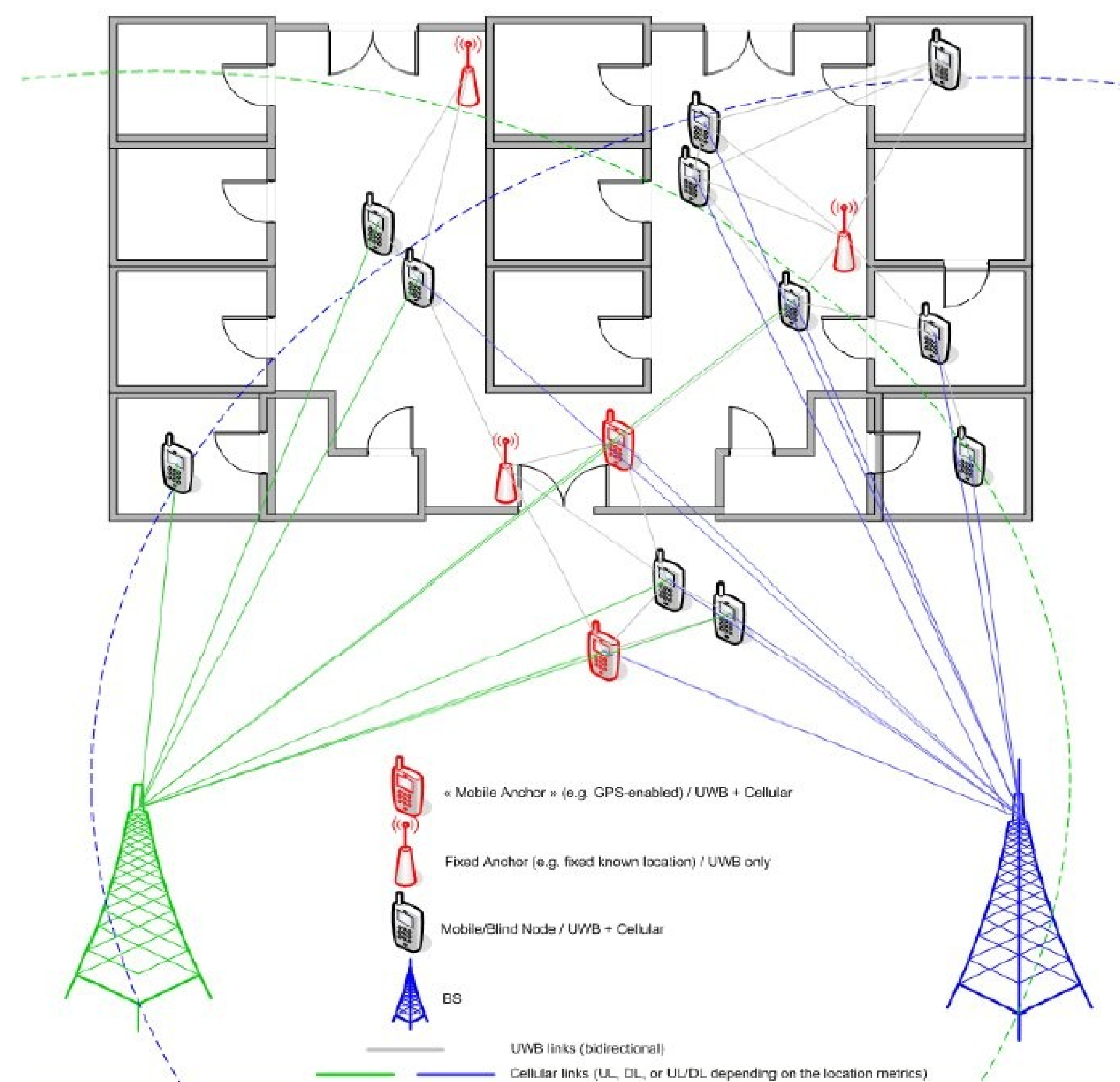
PyRay simulator architecture



Conclusion

PyRay is going to be used by two European projects:

- WHERE (radio positioning)
- UCELLS (spectrum sensing)



Thank you!

Questions?