Presentation summary:

1. The Antenna Synthesis processes and benefits
2. The Antenna Synthesis features
3. IoT examples

1. The Antenna Synthesis processes and benefits

To cope with the multifold challenges of antenna design, an Antenna Synthesis (AntSyn) system is developed. The backend algorithm automated an output as system/RF engineers or antenna experts simply enter desired antenna specifications and hit the run button. As such, users can specifically define the antenna performance requirements, while the advanced algorithm performs smart optimisation and eliminates weaker solutions.

The automated antenna design process allows all levels of engineers to develop high-performance antenna with more insights. The easy-to-use system also helps discover more design possibilities with smart optimisation while reducing the risks of rework and design failure, ultimately minimising cost and time.

One of the use cases is the Google's Ara smartphone. As it takes quick experimentation on different modules of antenna design to produce the most effective output, a range of designs are generated by AntSyn to get real data via trials.

2. The Antenna Synthesis features

To generate the optimum antenna design, users are required to run only one spec sheet with all specs on it, namely the band pattern, geometry including size of antenna and separate ground specifications, antenna library that features 189 antenna style templates, run controls, etc. Along with the design output, a dashboard also shows the performance and pattern of antenna model. Users can download any desired design to many simulators and CAD formats.

3. IoT examples

To create an IoT device with dual-band Wifi, IoT device package, and MIMO (multiple-input multiple output), three different iterations are tried out, namely single-port antenna on dielectric, 2-port antenna with no dielectric, and 3-port antenna array. All iterations show results that match well with client requirements and performance expectations, which quickly move the production forward with consideration on miniaturisation and addition of more ports or antennas.

The end