Technical scope

Radar environment and phenomenology

- Propagation, foliage penetration
- Target and clutter signature
- Low observable design
- Multifunction systems simulation

Radar systems

- Ground to air surveillance
- Ground to space surveillance
- Naval and coastal surveillance
- Airborne surveillance
- Fire control radar
- Meteorological radars
- Secondary radar
- ATM systems
- Multifunction, active / passive RF-EW-CNI systems
- Emission control, LPI Radars
- Networks of sensors
- Multiplatform / multisite systems
- ECM / ECCM / ESM
- Counterstealth detection
- Design / validation of complex systems
- Frequency spectral challenges to radar systems
- Weather radar
- Ballistic defence missiles

Remote sensing from airborne or spaceborne systems

- SAR modes for 2D and interferometric SAR
- Distributed / bistatic or multistatic systems
- Innovative SAR concepts
- Space Situational Awareness (SSA)
- Maritime Situational Awareness (MSA)

Waveform design, beamforming and signal processing

- Space-time waveforms / processing (STAP)
- Knowledge Aided (KA) STAP
- Adaptive beamforming
- Coloured / Interleaved transmission, MIMO
- Multifrequency / multipolarisation techniques
- Target extraction from clutter and jamming
- Detection, CFAR, tracking after / before detection
- Cognitive radar
- Waveform diversity

Emerging radar applications

- Mine detection
- Pollution detection, environment monitoring
- Automatic cruise control / security control
- Docking aid, tank gauge
- Surveillance of runways / detection of debris
- Sense and avoid

Emerging technologies

- Bistatic / multistatic radar
- Time and frequency synchronisation
- Passive detection and location, triangulation
- Low frequency radar
- Millimetre radar / radiometry
- Dual band radar
- Ultra wide band radar
- Laser radar
- High power solid state
- RF photonics
- Superconducting oscillators and filters
- MEMS for radar applications
- Conformal, non-standard antenna
- Bio-inspired radars
- Health monitoring radars
- Radar entomology

Advanced sub-systems technologies

- New antenna concepts
- Wideband antennas and radomes
- Antenna calibration
- Frequency / angular selective structures
- RF filtering
- Future T/R modules
- High speed analogue to digital converters
- RF modular architectures
- Integrated modular avionics
- Reconfigurable processing architectures
- Benefits of civilian technologies (COTS)

Computer modelling, simulation and validation

- Virtual prototyping
- Environment modelling
- Performance evaluation

Radar management techniques

- Multifunction radar / waveform management
- Data fusion, resources allocation
- Radar beam scheduling and planning
- Multicriteria optimisation

- Multilateration / cooperation of sensors
- A-SMGCS (Advanced- Surface Movement Guidance and Control System)

Automatic classification

- NCTR, ATR
- ISAR
- Modelling / learning
- High Range Resolution systems
- Sensor fusion for identification