



### RF Spectrum Access and Use

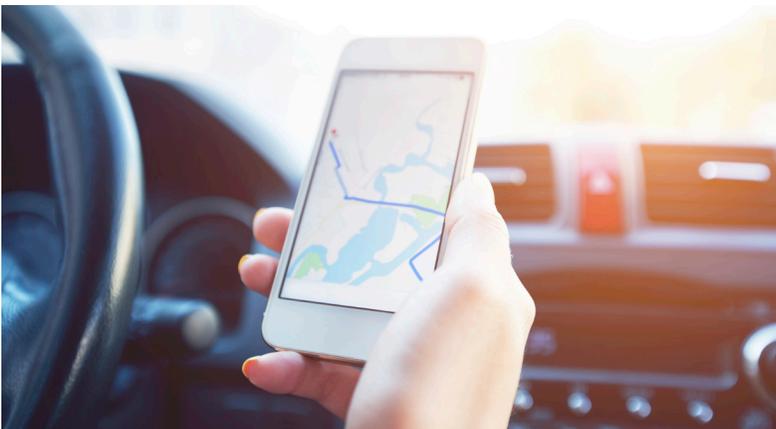
The world is becoming increasingly reliant on the radio frequency (RF) spectrum to enable essential capabilities in defense, navigation, communications, and science, among others. As demands for access to and use of the RF spectrum grow, it is essential that effective management of that spectrum — the regulation of access to and use of radio frequencies — be employed, to maximize usefulness and minimize interference or misuse.

### Spectrum Management (SM) Expertise

The Aerospace Corporation has provided expertise to our customers in addressing spectrum issues from inception of new systems to issues involving the potential loss of spectrum and/or spectrum sharing. We have assisted in developing plans and architectural concepts for monitoring of RF interference (RFI) and identifying alternative means of mitigating RFI through operational techniques, as well as determining costs for our recommended courses of action.

#### Aerospace Spectrum Management Expertise

- › Spectrum policy analysis and development
- › Interference impact studies and predictions
- › Regulatory issues relating to acquisition and program requirements
- › Interference resolution and coordination support
- › International and national coordination assistance
- › Satellite operations need assured access to spectrum
- › RFI mitigation techniques development
- › Terrestrial systems coordination
- › Spectrum economic analysis
- › Development of optimized spectrum architectures
- › Regulatory filings
- › Risk assessment of spectrum-dependent architectures



Increasing demand for high-speed wireless networks (especially for mobile devices) and broadcast downlink frequencies is growing world-wide. Federal and non-federal applications are seeking to share or repurpose spectrum originally allocated to other applications.

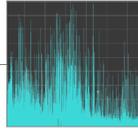
## Spectrum Management Expertise

### Aerospace SM Disciplines

Successful SM is crucial to the health of all segments of the government, and to civil and commercial operations.

SM comprises technical and nontechnical disciplines that are required for a comprehensive understanding of customer requirements and use.

The Aerospace Corporation possesses the necessary expertise in all SM disciplines to address our customers' SM operational needs and issues.



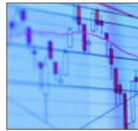
#### Engineering

- › Radio frequency interference analyses
- › Communication system analyses
- › System architectures design
- › Team leadership in spectrum management technical activities



#### Regulation

- › Support to meet analytic and regulatory requirements for spectrum use authorization
- › Team leadership in spectrum management regulatory activities



#### Economics

- › Survey and identify new technologies and trends in spectrum usage
- › Studies to open opportunities in space- and ground-based communication requirements
- › Determine costs associated with spectrum sharing and RFI mitigation



#### Policy

- › Spectrum sharing assessment and studies
- › Policy development



#### Legal

- › Assist with navigation of complex telecommunications regulatory issues

### Assuring Mission Success

Our expertise in SM has been developed over the last 50 years through assisting our customers in dealing with all aspects of SM issues, and negotiating spectrum use for space-based as well as terrestrial-based communications systems.

One of our roles in SM support is coordinating access for federal and non-federal customers to utilize the spectrum with minimal risk of RFI.



#### Federal

- › U.S. national security space programs
- › United States Air Force (USAF), USAF Space and Missile Systems Center
- › National Aeronautics and Space Administration (NASA)
- › National Oceanic and Atmospheric Administration (NOAA)



#### Non-Federal

- › Commercial companies
- › Universities
- › International organizations working in the national interest



## The Aerospace Corporation

Aerospace is a nonprofit corporation that operates a federally funded research and development center (FFRDC) for the United States Air Force. This FFRDC spans the entire space domain for government as well as civil space and other federal agencies. With a world-class workforce of roughly 3,000 engineers and scientists, Aerospace is able to respond with agility to the unique challenges posed by national security space requirements, delivering well-defined, innovative solutions that assure mission success.