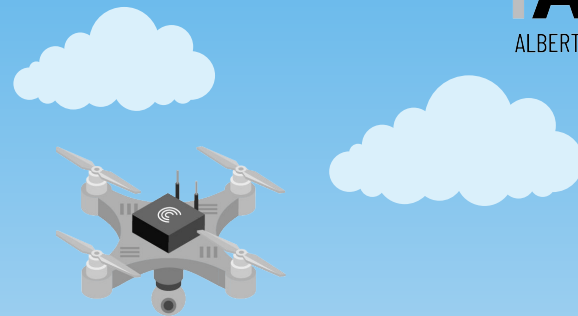
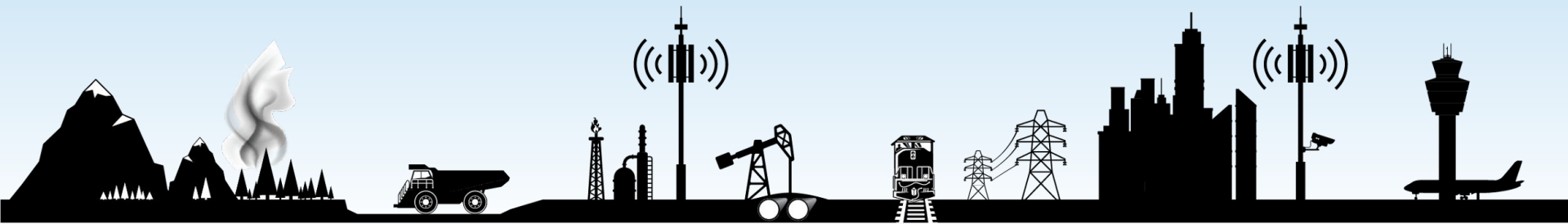


# AIRmarket



## Vision for C2 Services in Canada Request for ISED Support

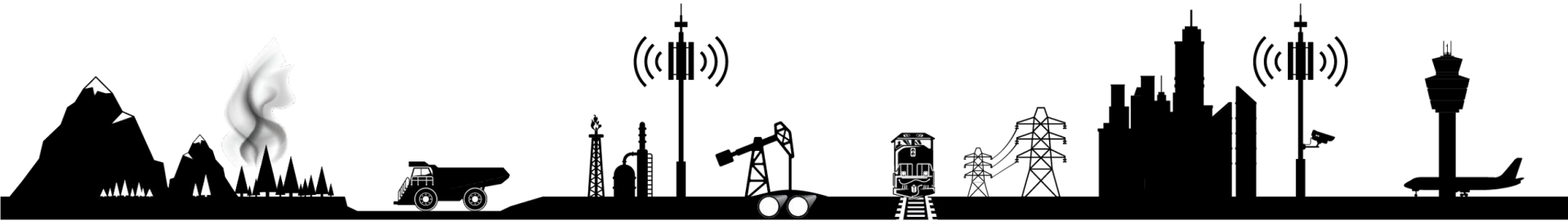
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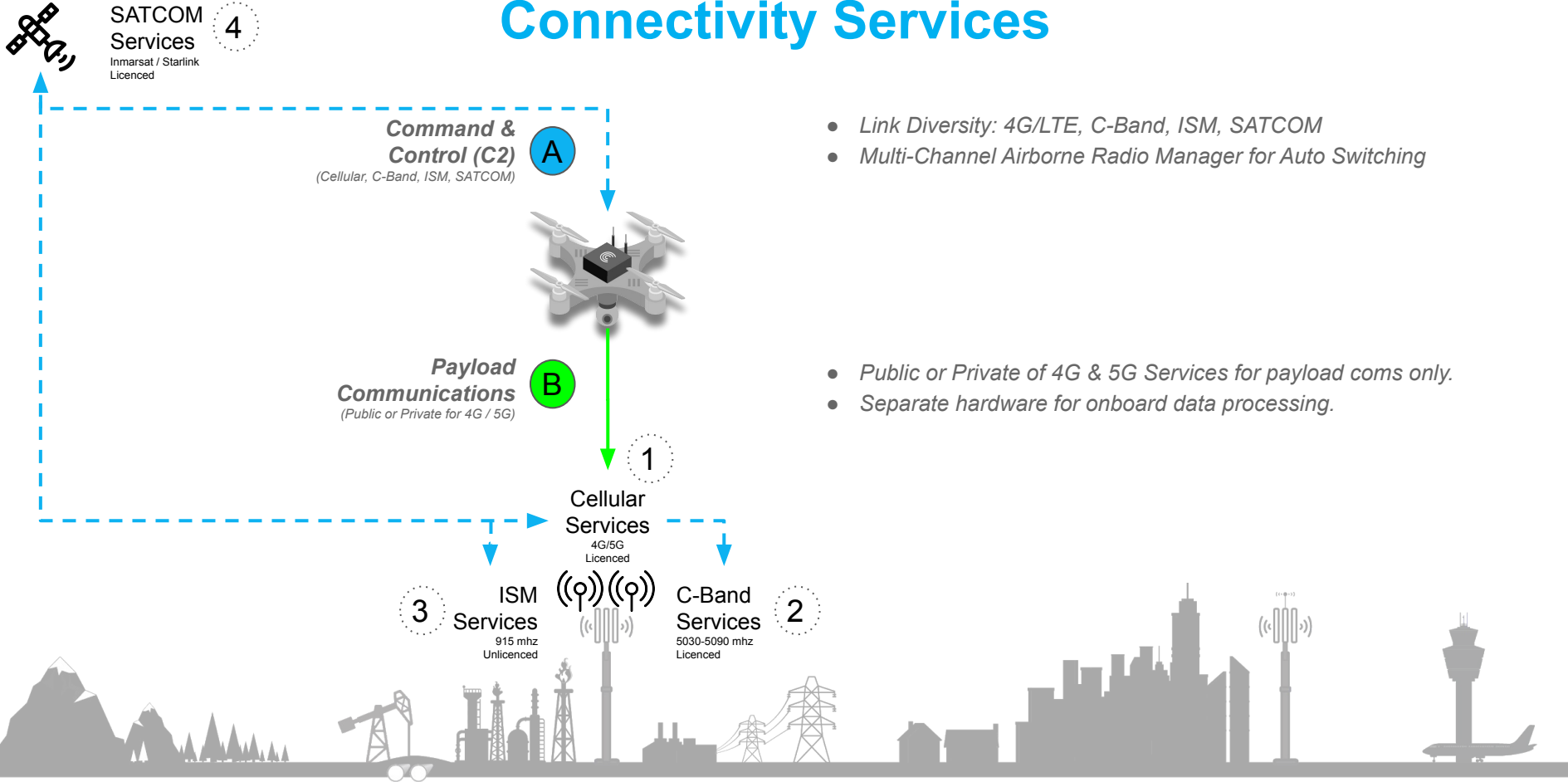
Section 2

# Command & Control (C2) Path

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# iART Reference Architecture of Connectivity Services



# USA is Setting Spectrum Path - Use of 5030-5090 mhz

## Executive Summary of Rules

- The FCC published a new rule on January 8, 2025 which will enable UAS operators to access dedicated spectrum for control-related communications: 5030 - 5090 MHz.
- Under Initial Access Mechanism (IAM) operators obtain frequency assignments in a **20 MHz** portion of the **5040 - 5060 MHz** band for non-networked operation while final plans for Non-Networked Access (NAA) & Network-Supported Services' (NSS) are established.
- One or more dynamic frequency management systems (DFMSs) will manage and coordinate access to the spectrum. Providing requesting operators with temporary frequency assignments to support UAS control link communications.
- Spectrum use authorized for NAA use under the **"License-by-Rule"** framework. NNA users must use certified NNA stations, and comply with the applicable NNA rules. No need not obtain individual spectrum licenses from the FCC.

## Deployment Phases

### 1) Manual ISM Phase

*FAA performs manual deconfliction of operators to enable use for shaping the next phase of deployment.*

### 2) Automated DFMS Phase

*FCC establishes the framework for automated allocations to manage deconflictions using DFMS by operators.*

## Resources / Documentation

### 1) FCC Release - 08 JAN 2025

*Adopts initial rules for "drone" operations in the 5 GHz spectrum band.*

### 2) FCC Final Rule Making

*Spectrum Rules and Policies for the Operation of Unmanned Aircraft Systems. Defines the framework for how the spectrum will be implemented.*

### 3) FCC Amendment for WRT-12

*FCC recognizes the allocation of 5030 - 5090 MHz for UAS C2.*

### 4) Final Acts WRT-12

*International agreement for 5030 - 5090 MHz will support UAS C2.*

## Associated Standards

### 1) RTCA DO-362

*"C2 Data Link Minimum Operational Performance Standards" defines the standards for the ARS & GRS hardware.*

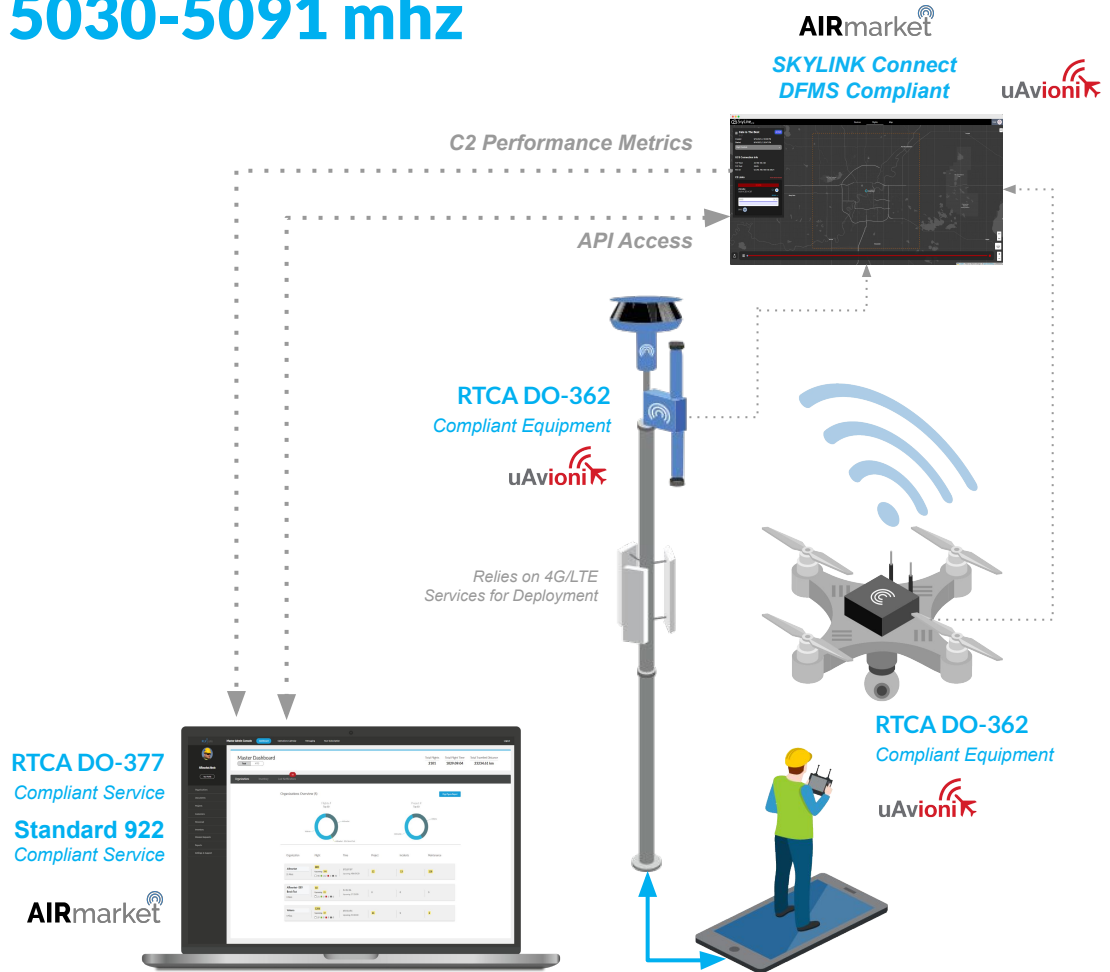
### 2) RTCA DO-377

*"Minimum Performance of an Overall C2 Link System" defines the operational performance UAS C2 Links required by C2 Service Providers (C2CSP)*

# C2 Pathforward - Use of 5030-5091 mhz

## Summary of Proposal / Plans

- Proposing “Full Compliance” with FCC Rulemaking and RTCA DO-362 & RTCA DO-377 by policy.
- Proposing spectrum authorization to be granted under Development Licence by policy. Operators applications are deconflicted by ISED for interim deployment while industry consultation starts.
- Investment (\$) to deploy a network of GRS's co-located with airspace surveillance to establish the RTM enabling infrastructure. uAvionix achieves RTCA DO-362 compliance for GRS's & ARS's.
- AIRmarket is an recognized C2 CSP that achieves RTCA DO-377 compliance through front-end services.
- Our Multi-link & Multi-path solution will achieve performance requirements defined in Standard 922 - RPAS Safety Assurance.
- **Proposed Modification:** Any connectivity service to enable ARS transmission approval. Current config inhibits use in 4G/LTE coverage areas only.



# Vision for CND Industry - Whats Needed?

## Proposal for Canada

- Seeking “**Interim Approval**” by policy under Development Licencing framework. Develop industry working knowledge to feed into ISED consultation process with “Full Compliance” to FCC Rulemaking.
- Need to align our Canadian strategy for Payload Connectivity.

Topic	USA – Final Rulemaking	CDN – Proposed Interim Policy
International Spectrum Allocation with WRC-12	✓	✓
Compliance with RTCA DO-362 & RTCA DO-377	✓	✓
Enables Multi-Link & Multi-Path Solution Framework for C2	✓	✓
Payload Connectivity Services	Use of 4G/LTE or <b>CBRS / 4G</b> or <b>SATCOM</b>	Use of 4G/LTE or <b>3.9 GHz / 5G</b> or <b>SATCOM</b>



## Industry Focus Areas

- Drive development ASR's & Network Appliances compliant with vision: Multi-Path, Multi-Link
- Drive size, weight, and power reductions for SATCOM
- Drive alignment for payload connectivity services between USA & CDN. Use of Private 4G & 5G services and hardware development.
- Drive MNO's for coverage data & aviation profiles / services
- Drive aircraft OEM alignment

## Operational Notes

- C2 Risk profile aligns with Population Density. # of links will increase with pop density based on terrestrial services.
- SATCOM will be required for northern Canada operations.

# What the Vision Enables - For Industry

## Emerging Deployment Strategy

### 1) Strategically Deploy C-Band for:

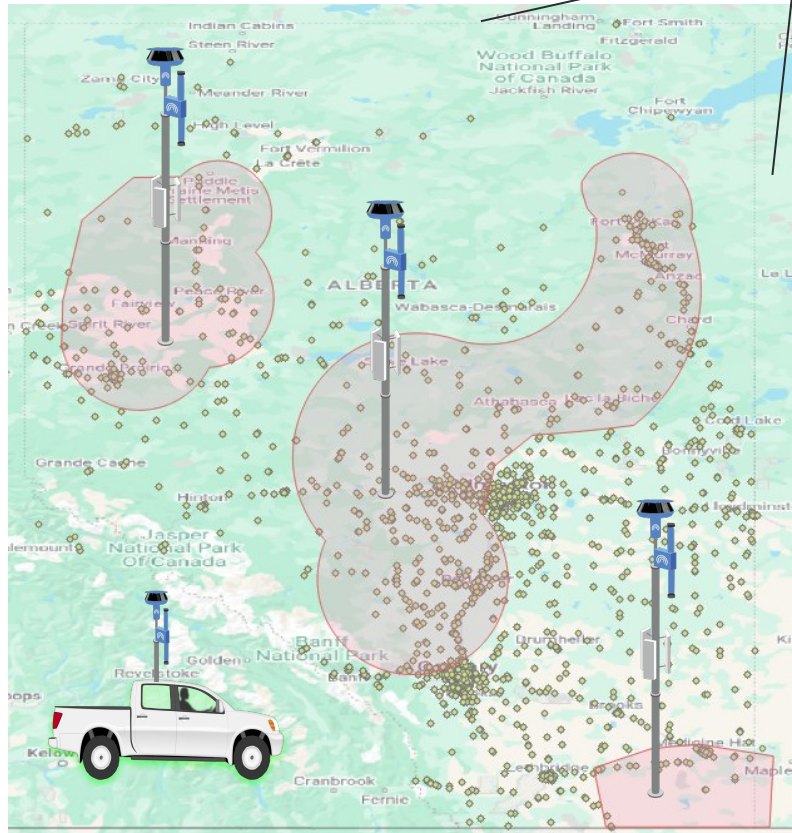
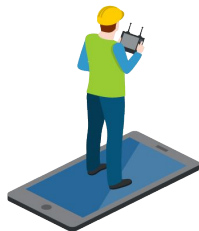
- a) Wildfire Shoulder Regions (Green Zone)
- b) Energy Industry Assets

### 2) Deploy Multi-path Options

- a) Fixed - Mobile
- b) Licenced - Unlicensed

### 3) Acknowledge & Prioritize Coverage Regions

- a) Terrestrial & SATCOM



# Vision for CND Industry - The Ask

What are the Outcomes  
Are Being Sought?



## 1) Desired

ISED to provide **Formal & Interim**  
“**Approval**” of the proposal.

## 2) Needed

Produce an **ISED** Position Paper  
Input from Transport Canada  
to Establish a Vision

## 3) Tolerable

ISED to “**Not Say No**”  
to the proposal

## 3) Not Acceptable

**No Response**  
to the proposal



# The End

