



Growing  
**ideas**  
through  
**networks**

# HungaroControl's Air-Ground-Air communication concept in order to enable UAVs' ecosystem

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# HungaroControl in a nutshell

**Record traffic in 2019: 1.087.355 movements**  
**2020: 488.150 movements**  
**2021: 525.405 movements**



**436.320** All movements in Hungarian airspace

**89.085** KFOR sector movements

**327 266** En-route movements in Hungarian Airspace

**47 341** Arrivals / Departures at Budapest Liszt Ferenc International Airport

**45,5** Air Navigation Services (EUR m)

**816** 175 Air Traffic Controller Officers  
235 Operational personnel

**Number of employees**



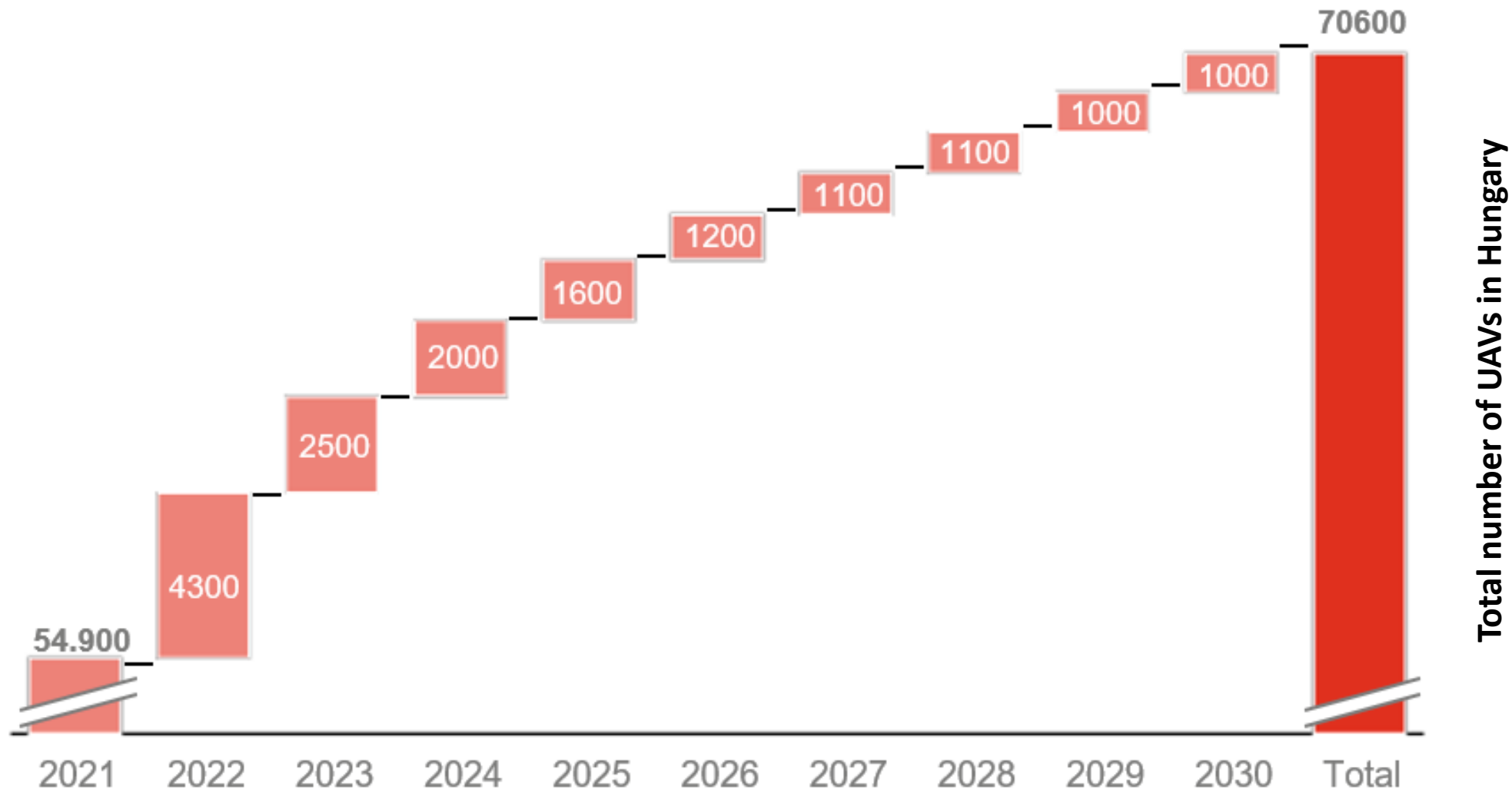
## EUROCONTROL STATFOR 7-year forecast for \*Europe 2021-2027

Actual and future IFR movements, % traffic compared to 2019



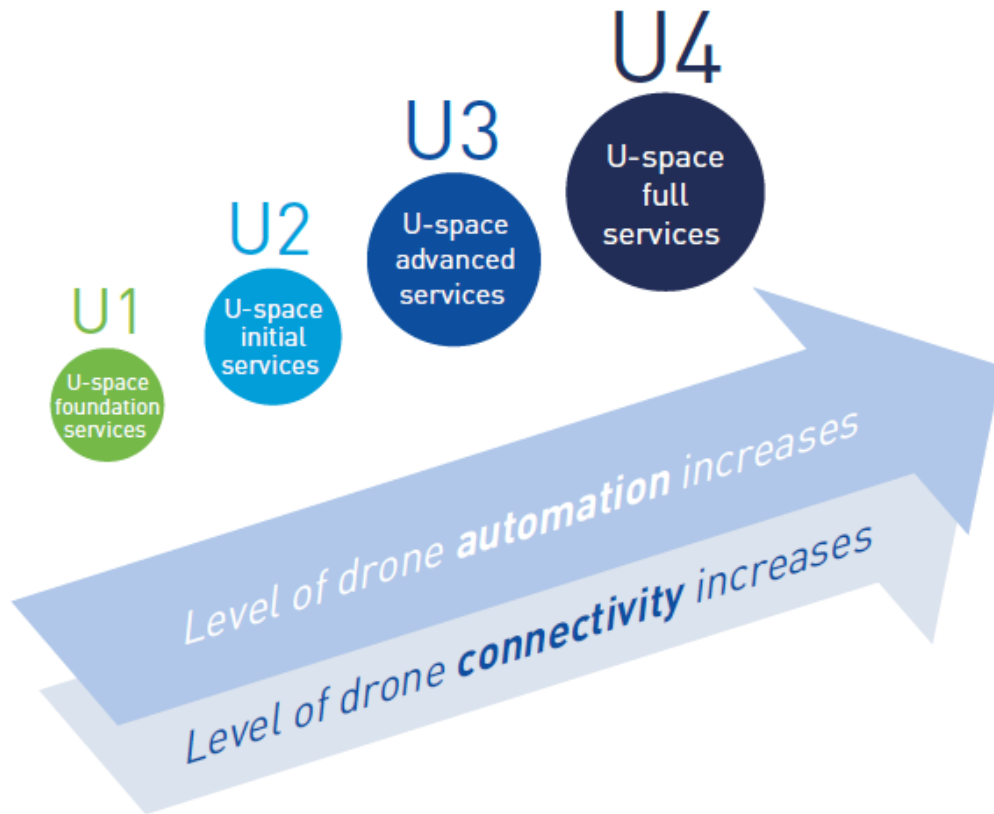
\* Europe = ECAC 44 Member States  
Source: EUROCONTROL, 7-year Forecast October 2021

# UAV number forecast in Hungary



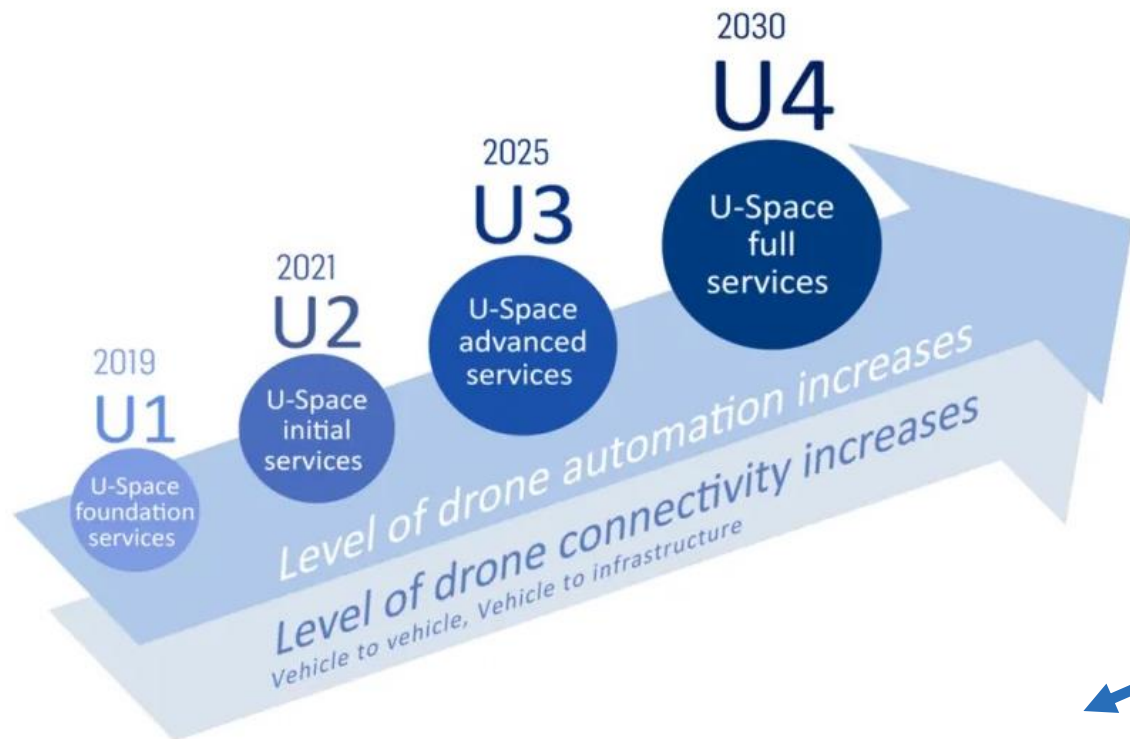
Source: PwC Hungary's research for HungaroControl, July 2020

# SESAR Joint Undertaking: U-space blueprint



U1	Foundation	<ul style="list-style-type: none"> <li>▶ Registration</li> <li>▶ Registration assistance</li> <li>▶ e-identification</li> <li>▶ Geo-awareness</li> <li>▶ Drone aeronautical information management</li> </ul>
U2	Initial	<ul style="list-style-type: none"> <li>▶ Tracking (Position report submission)</li> <li>▶ Surveillance data exchange</li> <li>▶ Geo-fence provision (includes dynamic geo-fencing)</li> <li>▶ Operation plan preparation /optimisation</li> <li>▶ Operation plan processing</li> <li>▶ Risk analysis assistance</li> <li>▶ Strategic Conflict Resolution</li> <li>▶ Emergency Management</li> <li>▶ Incident/ Accident reporting</li> <li>▶ Citizen reporting service</li> <li>▶ Monitoring</li> <li>▶ Traffic information</li> <li>▶ Navigation infrastructure monitoring</li> <li>▶ Communication infrastructure monitoring</li> <li>▶ Legal recording</li> <li>▶ Digital logbook</li> <li>▶ Weather information</li> <li>▶ Procedural interface with ATC</li> </ul>
U3	Enhance	<ul style="list-style-type: none"> <li>▶ Dynamic Capacity Management</li> <li>▶ Tactical Conflict Resolution</li> <li>▶ Geospatial information service</li> <li>▶ Population density map</li> <li>▶ Electromagnetic interference information</li> <li>▶ Navigation coverage information</li> <li>▶ Communication coverage information</li> <li>▶ Collaborative interface with ATC</li> </ul>
U4	Full	<ul style="list-style-type: none"> <li>▶ Integrated interfaces with manned aviation</li> <li>▶ Additional new servicesw</li> </ul>

# EU Commission Regulation 2021/664 and 2021/665



**CISP**

Common Information Service Provider

**USSP**

U-Space Service Provider

Official Journal of the European Union L 139

Volume 64  
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English edition Legislation

Contents

II Non-legislative acts

REGULATIONS

- \* Commission Regulation (EU) 2021/662 of 22 April 2021 amending Regulation (EC) No 748/2009 on the list of aircraft operators which performed an aviation activity listed in Annex I to Directive 2003/87/EC on or after 1 January 2006 specifying the administering Member State for each aircraft operator (\*) ..... 1
- \* Commission Regulation (EU) 2021/663 of 22 April 2021 amending Annex III to Regulation (EC) No 396/2005 of the European Parliament and of the Council as regards maximum residue levels for chlordecone in or on certain products (\*) ..... 148
- \* Commission Implementing Regulation (EU) 2021/664 of 22 April 2021 on a regulatory framework for the U-space (\*) ..... 161
- \* Commission Implementing Regulation (EU) 2021/665 of 22 April 2021 amending Implementing Regulation (EU) 2017/373 as regards requirements for providers of air traffic management/air navigation services and other air traffic management network functions in the U-space airspace designated in controlled airspace (\*) ..... 184
- \* Commission Implementing Regulation (EU) 2021/666 of 22 April 2021 amending Regulation (EU) No 923/2012 as regards requirements for manned aviation operating in U-space airspace (\*) ..... 187

(\*) Text with EEA relevance.

EN Acts whose titles are printed in light type are those relating to day-to-day management of agricultural matters, and are generally valid for a limited period. The titles of all other acts are printed in bold type and preceded by an asterisk.

## Air Traffic Management

- Maintaining **safety** on the highest level
- Increasing **efficiency**
- Expanding regional Free-Route Airspace
- Optimizing Hungarian sectors
- Controlling the KFOR airspace
- Civil-military cooperation
- Development of rTWR at LHBP
- Development of MATIAS system



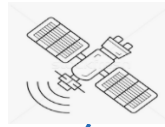
## UAV Traffic Management

- **Mydronespace** application from 1st January 2021
- Design and provision of **CISP** function
  - aggregation of information received from the systems and airspace users
  - providing access to stakeholders
- Supporting state-owned and private **USSPs**
- Building up **AGA network**: a new communication infrastructure based on mobile communication technology

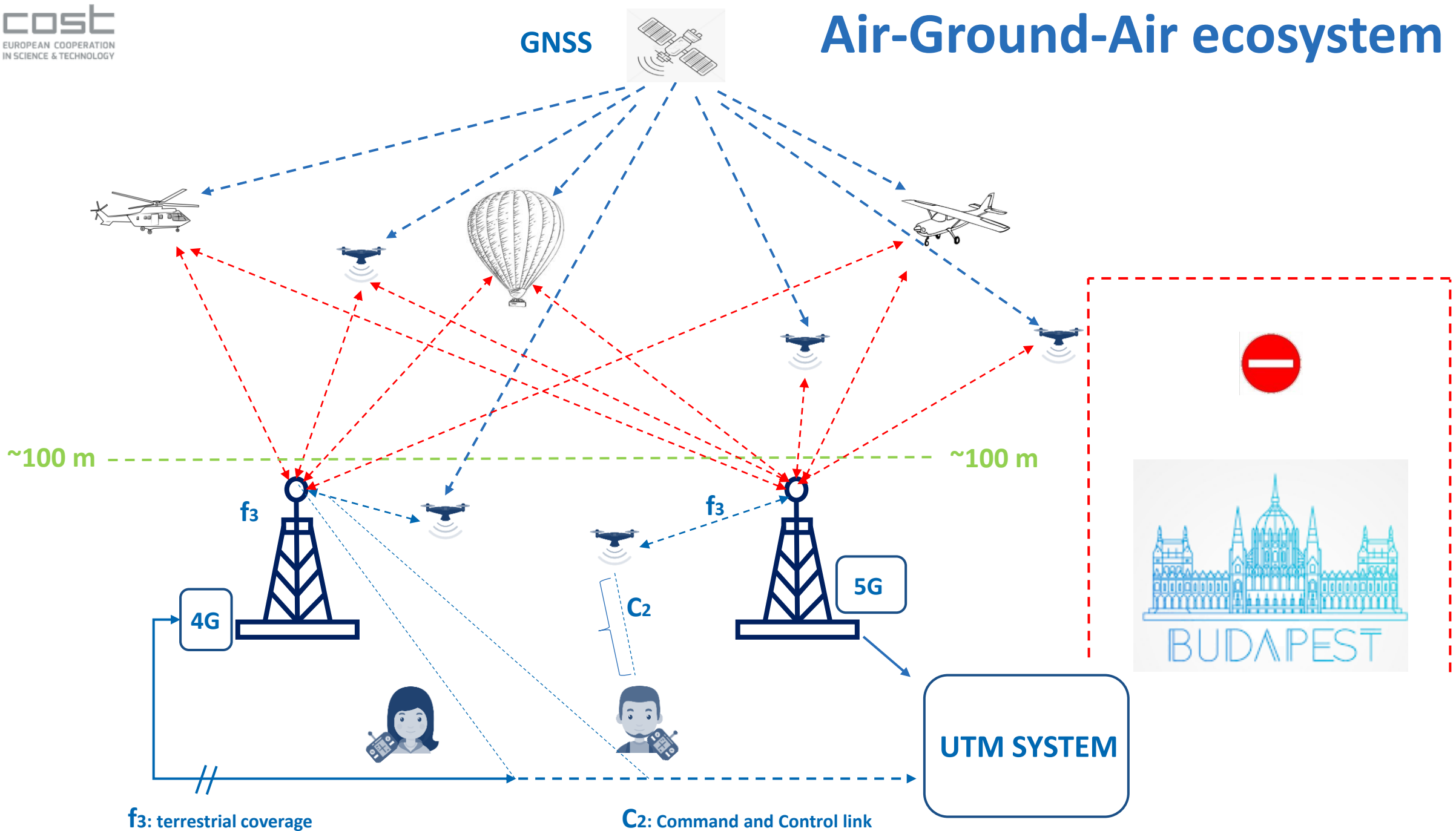


**The aim is to strengthen the relationship between the two traffic management systems and integrate them in the long-term since the airspace size is limited**

GNSS



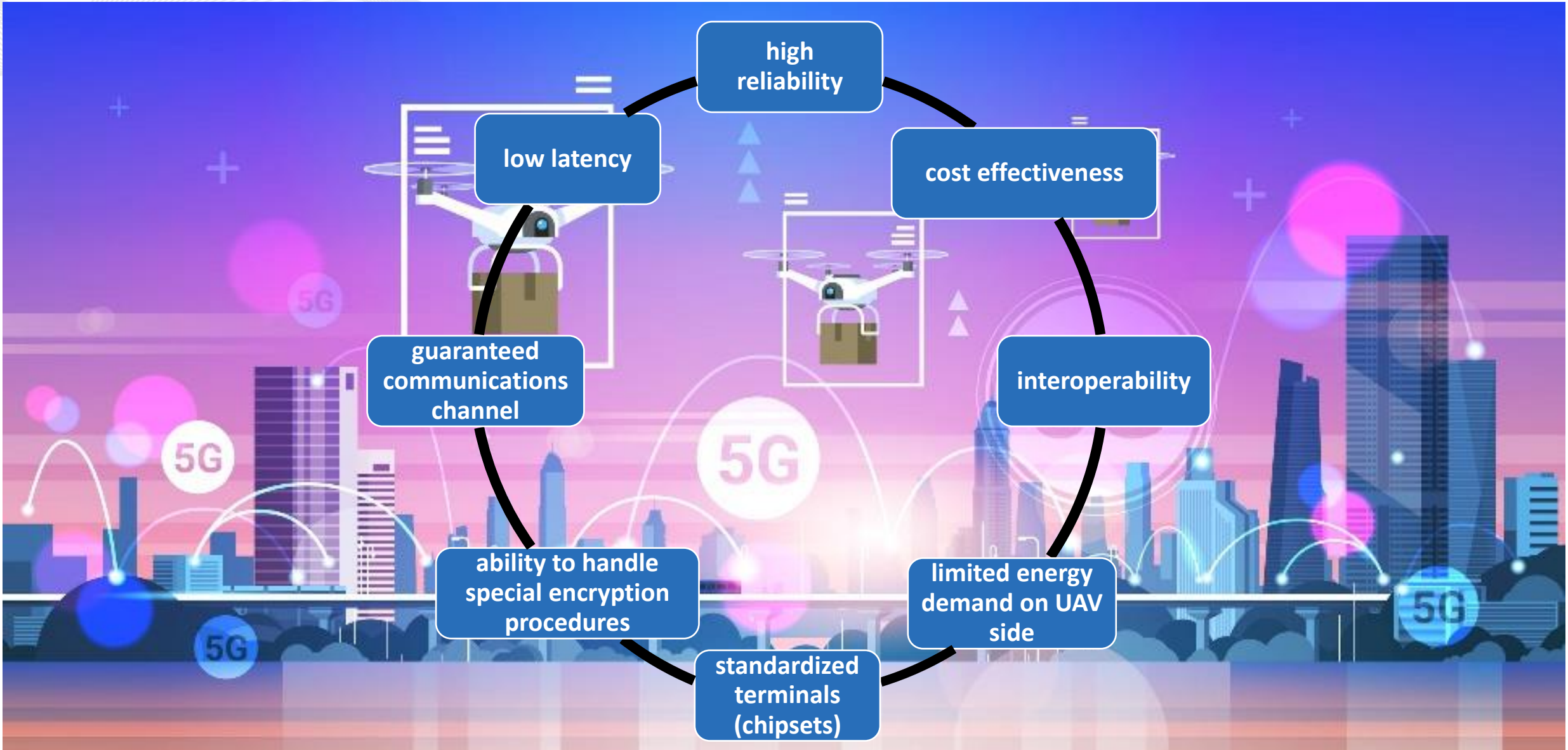
# Air-Ground-Air ecosystem



f3: terrestrial coverage

C2: Command and Control link

# AGA network requirements





**Thank you for your attention!**

**If you have any questions:**

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