



# COM11.2 — Voice over Internet Protocol (VoIP) in Airport/Terminal

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This Implementation Objective aims at efficient use of Voice over Internet Protocol (VoIP) by harmonized and coordinated implementation for ground/ground and ground part of ground/air aeronautical communications, ensuring network benefits from VoIP implementation.

The initiative covers inter-centre (encompassing all type of ATM Units) voice communication and the links with the ground radio stations. COM11.2 is applicable to 'Airport' and 'Terminal' Operating Environments. Center-tower voice communications not yet migrated to VoIP are currently performed via analogue and digital circuits.

This legacy ATM voice services will soon no longer be supported by the European telecommunication service providers, making the use of new technology necessary. At present and in order to follow the evolution of the communication technologies, ATM-VoIP is the global standard (ICAO DOC 9896 ed2, based on EUROCAE ED137) for ground telephony and ground segment of the Air-Ground voice. ATM-VoIP industrial standard (EUROCAE ED-137) is maintained and evolved over time to ensure that voice communication requirements are met.

The transition towards VoIP is bringing interoperability. Cross-border aspects need to be addressed appropriately within the network perspective. VoIP in ATM constitutes an essential part of Network Operational Excellence Programme WST13.5 – IP Services and VoIP.

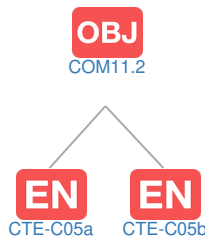
This sub-project aims at efficient use of Voice over Internet Protocol by harmonized and coordinated implementation for ground/ground and ground part of ground/air aeronautical communications, ensuring network benefits from VoIP implementation.

*NOTE FOR MILITARY AUTHORITIES: It is the responsibility of each military authority to review this Objective IN ITS ENTIRETY and address each of the SLoAs that the military authority considers RELEVANT for itself. This has to be done on top and above of the review of "MIL" SLoAs which identify actions EXCLUSIVE to military authorities.*

|                     |                                 |
|---------------------|---------------------------------|
| <b>Edition</b>      | 2022                            |
| <b>Stakeholders</b> | Air Navigation Service Provider |
| <b>Type</b>         | SESAR                           |
| <b>Scope</b>        | ECAC+                           |
| <b>Status</b>       | Active                          |

## Context

### Related Elements

















## Applicability Area(s) and Timescales

**Applicability Area:** All ECAC States except: Armenia, Maastricht UAC, Malta. Plus: Israel, Morocco (All ECAC+ States)

| Timescales                     | From       | By         | Applicable to      |
|--------------------------------|------------|------------|--------------------|
| Initial operational capability | 01-01-2013 | -          | Applicability Area |
| Full operational capability    | -          | 31-12-2023 | Applicability Area |

## Links to ATM Master Plan Level 2

### **EN** Enablers

| Code     | Title   | IOC | Related Elements   |
|----------|---|-----|--|
| CTE-C05a | VoIP for ground telephony                                   | -   |    <br>   |
| CTE-C05b | Digital Voice / VoIP for ground segment of Air-Ground voice | -   |    <br>   |

### **SOL** Links to SESAR Solutions

| Code            | Title | Program | Related Elements |
|-----------------|-------|---------|------------------|
| No record found |       |         |                  |

### **PCP** Links to PCP ATM Sub-Functionalities

| Code            | Title | Related Elements |
|-----------------|-------|------------------|
| No record found |       |                  |

**ICAO** ICAO Block Modules: No associated data

## References

### Applicable legislation

None

### Applicable ICAO Annexes and other references

None

### Deployment Programme 2022

-

### Operating Environments

Airport

Terminal Airspace

## Expected Performance Benefits

|                               |   |
|-------------------------------|---|
| <b>Safety</b>                 | Safety maintained or improved by providing enhanced signalisation functions and by providing a more resilient infrastructure. |
| <b>Capacity</b>               | Capacity maintained or improved by providing enhanced signalisation functions.  |
| <b>Operational efficiency</b> | -   |
| <b>Cost efficiency</b>        | Reduced costs by enabling flexible and dynamic use of ANSP resources, leading to long-term savings.                           |
| <b>Environment</b>            | -   |
| <b>Security</b>               | -   |

## Stakeholder Lines of Action

| Code  | Title   | From       | By         | Related Enablers |
|-------|---|------------|------------|------------------|
| ASP01 | Develop safety assessment for the changes   | 01-01-2013 | 31-12-2023 |                  |
| ASP03 | Upgrade and put into service Voice Communication Systems to support VoIP centre-tower telephony             | 01-01-2013 | 31-12-2023 |                  |
| ASP04 | Upgrade and put into service Voice Communication Systems to support VoIP links to the ground radio stations | 01-01-2013 | 31-12-2023 |                  |

## Supporting Material

| Title   | Related SLoAs |
|---|---------------|
| EC - COMMISSION IMPLEMENTING REGULATION (EU) 2017/373 - (OJ L 62, 8.03.2017, p. 1) - COMMISSION IMPLEMENTING REGULATION (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, (EU) No 1035/2011 and (EU) 2016/1377 and amending Regulation (EU) No 677/2011 03/2017<br><a href="https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R0373&amp;from=EN">https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R0373&amp;from=EN</a> | ASP01         |
| EUROCAE - ED-136 - Voice over Internet Protocol (VoIP) Air Traffic Management (ATM) System Operational and Technical Requirements 02/2009<br><a href="https://eshop.eurocae.net/eurocae-documents-and-reports">https://eshop.eurocae.net/eurocae-documents-and-reports</a>  | ASP03, ASP04  |
| EUROCAE - ED-137/1B - Interoperability Standards for VoIP ATM Components - Volume 1 Radio<br><a href="https://eshop.eurocae.net/eurocae-documents-and-reports">https://eshop.eurocae.net/eurocae-documents-and-reports</a>  | ASP04         |
| EUROCAE - ED-137/1C - Interoperability Standards for VoIP ATM Components - Volume 1: Radio 04/2017<br><a href="https://eshop.eurocae.net/eurocae-documents-and-reports">https://eshop.eurocae.net/eurocae-documents-and-reports</a>   | ASP04         |
| EUROCAE - ED-137/1C Change 1 - Interoperability Standards for VoIP ATM Components - Volume 1: Radio 05/2020<br><a href="https://eshop.eurocae.net/eurocae-documents-and-reports">https://eshop.eurocae.net/eurocae-documents-and-reports</a>  | ASP04         |
| EUROCAE - ED-137/2C - Interoperability Standards for VoIP ATM Components - Volume 2: Telephone 03/2019<br><a href="https://eshop.eurocae.net/eurocae-documents-and-reports">https://eshop.eurocae.net/eurocae-documents-and-reports</a>   | ASP03         |
| EUROCAE - ED-137/2C Addenda 1 to 8 - Interoperability Standards for VoIP ATM Components - Volume 2 Addenda: Telephone 03/2019<br><a href="https://eshop.eurocae.net/eurocae-documents-and-reports">https://eshop.eurocae.net/eurocae-documents-and-reports</a>  | ASP03         |
| EUROCAE - ED-137/2C Change 1 - Interoperability Standards for VoIP ATM Components - Volume 2: Telephone 05/2020<br><a href="https://eshop.eurocae.net/eurocae-documents-and-reports">https://eshop.eurocae.net/eurocae-documents-and-reports</a>  | ASP03         |
| EUROCAE - ED-137/4B - Interoperability Standards for VoIP ATM Components - Volume 4 Recording 01/2012<br><a href="https://eshop.eurocae.net/eurocae-documents-and-reports">https://eshop.eurocae.net/eurocae-documents-and-reports</a>  | ASP04         |
| EUROCAE - ED-137/4C - Interoperability Standards for VoIP ATM Components - Volume 4: Recording 03/2019<br><a href="https://eshop.eurocae.net/eurocae-documents-and-reports">https://eshop.eurocae.net/eurocae-documents-and-reports</a>   | ASP03, ASP04  |
| EUROCAE - ED-137/5B - Interoperability Standards for VoIP ATM Components - Volume 5 Supervision 01/2012<br><a href="https://eshop.eurocae.net/eurocae-documents-and-reports">https://eshop.eurocae.net/eurocae-documents-and-reports</a>  | ASP04         |
| EUROCAE - ED-137/5C - Interoperability Standards for VoIP ATM Components - Volume 5: Supervision 03/2019<br><a href="https://eshop.eurocae.net/eurocae-documents-and-reports">https://eshop.eurocae.net/eurocae-documents-and-reports</a>   | ASP03, ASP04  |
| EUROCAE - ED-138 - Network Requirements and Performances for Voice over Internet Protocol (VoIP) Air Traffic Management (ATM) Systems - Part 2 Network Design Guideline 02/2009<br><a href="https://eshop.eurocae.net/eurocae-documents-and-reports">https://eshop.eurocae.net/eurocae-documents-and-reports</a>  | ASP03, ASP04  |

| Title  | Related SLoAs   |
|--|-----------------|
| EUROCONTROL - EAM 4 - ESARR 4 - Risk Assessment and Mitigation in ATM - Edition 1.0 / 04/2001<br><a href="https://www.eurocontrol.int/publication/esarr-4-risk-assessment-and-mitigation-atm">https://www.eurocontrol.int/publication/esarr-4-risk-assessment-and-mitigation-atm</a>   | ASP01           |
| EUROCONTROL - GUID-137 - EUROCONTROL Guidelines on conformity assessment for the interoperability Regulation of the single European sky - Edition 3.0 / 02/2012<br><a href="https://www.eurocontrol.int/publication/eurocontrol-guidelines-conformity-assessment-interoperability-regulation-single">https://www.eurocontrol.int/publication/eurocontrol-guidelines-conformity-assessment-interoperability-regulation-single</a> | ASP03,<br>ASP04 |
| EUROCONTROL - SIP v ATS-QSIG Gateway Interworking Test Specification - Edition 2 / 12/2013<br><a href="https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents">https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents</a>  | ASP03           |
| EUROCONTROL - SIP v ATS-R2 Gateway Interworking Test Specification - Edition 2 / 12/2013<br><a href="https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents">https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents</a>  | ASP03           |
| EUROCONTROL - VOTER 4.0.x Test Description - VOL 5 - Interoperability - Edition 3.1 / 12/2021<br><a href="https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents">https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents</a>   | ASP03,<br>ASP04 |
| EUROCONTROL - VOTER 4.0.x Test Description - VOL 6 - Performance for GRS-VCS Interfaces - Edition 3.1 / 01/2020<br><a href="https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents">https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents</a>   | ASP03,<br>ASP04 |
| EUROCONTROL - VOTER 4.0.x Test Description - VOL 7 - Supervision - Edition 3.2 / 01/2020<br><a href="https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents">https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents</a>  | ASP03,<br>ASP04 |
| EUROCONTROL - VOTER 4.1.x Test Description - VOL 2 - VCS Radio Interface - Edition 3.7 / 10/2021<br><a href="https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents">https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents</a>  | ASP04           |
| EUROCONTROL - VOTER 4.1.x Test Description - VOL 3 - VCS Telephone Interface - Edition 3.9 / 10/2021<br><a href="https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents">https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents</a>  | ASP03,<br>ASP04 |
| EUROCONTROL - VOTER 4.1.x Test Description - VOL 4 - Recorder Interface - Edition 3.6 / 12/2014<br><a href="https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents">https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents</a>   | ASP03,<br>ASP04 |
| EUROCONTROL - VOTER 4.1.x Test Description -VOL 1- GRS Radio Interface - Edition 3.9 / 10/2021<br><a href="https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents">https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents</a>  | ASP04           |
| EUROCONTROL - VOTER Test Tool - version 4.x.x (ED-137C)<br>-   | ASP03,<br>ASP04 |
| EUROCONTROL - VoIP in ATM Cross-Reference Matrix for ED-137C – VOTER 4.x.x 12/2021<br><a href="https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents">https://ost.eurocontrol.int/sites/VOTE/Shared Documents/Reference Documents</a>  | ASP03,<br>ASP04 |
| ICAO - Doc 9896 - Manual for the ATN using IPS Standards and Protocols - Edition 2.0 / 2015<br><a href="https://store1.icao.int/">https://store1.icao.int/</a>   | ASP03,<br>ASP04 |

## Consultation & Approval

|  |                          |
|--|--------------------------|
| <b>Working Arrangement in charge</b>                   | CNS / COM SG             |
| <b>Outline description approved in</b>                 | -                        |
| <b>Latest objective review at expert level</b>         | 12/2018                  |
| <b>Commitment Decision Body</b>                        | Provisional Council (PC) |
| <b>Objective approved/endorsed in</b>                  | 06/2019                  |
| <b>Latest change to objective approved/endorsed in</b> | -                        |