NATO STANDARD

AATMP-52

NATO STANDARD CNS EQUIPAGE FOR A DEPLOYABLE ATM-CNS CAPABILITY

Edition A Version 1
AUGUST 2020

NORTH ATLANTIC TREATY ORGANIZATION

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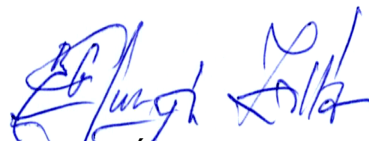**© NATO/OTAN**

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NORTH ATLANTIC TREATY ORGANIZATION (NATO)

NATO STANDARDIZATION OFFICE (NSO)

NATO LETTER OF PROMULGATION

24 August 2020

1.   The enclosed Allied Air Traffic Management Publication AATMP-52, Edition A, Version 1, NATO STANDARD CNS EQUIPAGE FOR A DEPLOYABLE ATM-CNS CAPABILITY, which has been approved by the nations in the AIR TRAFFIC MANAGEMENT, COMMUNICATIONS, NAVIGATION AND SURVEILLANCE ADVISORY GROUP (ATM-CNS AG), is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 7235.

2.   AATMP-52, Edition A, Version 1 is effective upon receipt.

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4.   This publication shall be handled in accordance with C-M(2002)60.

Zoltán GULYÁS
Brigadier General, HUNAF
Director, NATO Standardization Office

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATIONS

Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.

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RECORD OF SPECIFIC RESERVATIONS

[nation]	[detail of reservation]
CZE	The provision of Chapter 4 of NATO's AATMP-52 (A), Version 1, RD 1 standard will be without implementation. The Czech Armed Forces (CAF) does not have the required capabilities nor plans them. In accordance with NATO Position on the future use of TACAN (AC/92(ATMCNS)D (2018)0001), the CAF will use the infrastructure of other member states for en-route navigation in military operations outside the Czech Republic. As host-nation, the Czech Republic will ensure use of the deployable TACAN infrastructure of other member and cooperating states.
Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.	

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TABLE OF CONTENTS

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REFERENCES

NATO

1. STANAG 7216, *Tactics Techniques and Procedures (TTP) for Establishing air Traffic Control (ATC) in times of Crisis and Conflict*

2. STANAG 7204, *NATO Minimum Requirements for Personnel Providing Air Traffic Services (ATS) in NATO-led Operations*

3. STANAG 3805, *Allied Joint Doctrine for Airspace Control*

4. STANAG 3374, *Flight Inspection of NATO Radio/RADAR Navigation and Approach Aids*

5. STANAG 7174, Airfield and Heliport/Helipad Clearance Planes

6. STANAG 3346, *Marking and Lighting of Airfield Obstructions*

7. STANAG 3316, *Airfield Lighting*

8. STANAG 3534, *Airfield Lighting, Marking and Tone Down Systems for Non-Permanent/Deployed Operations*

9. STANAG 5535, *Air Surveillance and Ground Based Sensors Information Exchange*

10. STANAG 4565, *Airborne Multi Mode Receiver for Precision Approach Landing*

11. STANAG 4607, *North Atlantic Treaty Organization (NATO) Ground Moving Target Indication (GMTI) Format,* 07 Oct 2010

12. STANAG 7210, *Guidance in the Selection of STANAGs for Deployed Air Operations*

13. Bi-SC Directive 085-005, *NATO Approved Criteria and Standards for Airfields*

14. NATO Position on the Use of TACAN

15. NATO Vision Paper on the Future Precision Approach and Landing System (FPALS)

ICAO

1. ICAO Annex 14, Volume 1, *Aerodrome Design and Operations*.

2. ICAO Doc 9137, *Airport Services Manual*, Part 6

ABBREVIATIONS AND ACRONYMS

ASTWG	Aeronautical System and Techniques Working Group
ATC	Air Traffic Control
ATM	Air Traffic Management
CAT	Category
CNS	Communication, Navigation, Surveillance
GBAS	Ground Based Augmentation System
GLS	Ground Based Augmentation System Landing System
IFR	Instrument Flight Rules
ILS	Instrument Landing System
LOS	Line of Sight
MCVR	Mobile Visual Control Room
NATO	North Atlantic Treaty Organization
NM	Nautical Mile
NSO	NATO Standardization Office
NSDD	NATO Standardization Document Database
PAR	Precision Approach Radar
STANAG	Standard Agreement
TACAN	Tactical Air Navigation
TTP	Tactics, Techniques and Procedures
UHF	Ultra High Frequency
VFR	Visual Flight Rules
VHF	Very High Frequency

CHAPTER 1   INTRODUCTION

1.1.   General: The objective of this STANAG is to outline the deployable ATM-CNS capabilities to enable deployed NATO air operations. The list of capabilities is to allow NATO member nations to provide portions of ATM-CNS capabilities in a deployed environment. The components of a deployable ATM-CNS package will vary according to the size of the operation and, when applicable, with the availability of Host Nation resources. NATO approaches deployed ATM-CNS capabilities in an incremental fashion with emphasis placed on transitions to increased level of ATM services and sustained operations.

1.2.   Purpose: NATO member nations operate both independently as well as in coordination with other nations to provide airfield or airport services under a unified NATO chain of command. The member nations investments in Deployable ATM-CNS systems should be tailored to supporting Alliance Operations in a deployed environment and ensure operational interoperability with other partner nations. The investment in deployable ATM-CNS systems can be significant, and minimum equipment and capabilities requirements should be addressed in enough detail to ensure success. Ultimately, these are recommendations and the objectives and requirements of NATO and the owning nation would take priority.

1.3.   Scope: The scope of equipment and capabilities listings for each operational capability will provide recommended solutions packages with an effort to provide specific quantities of assets that can be scaled to meet specific mission demands. NATO standards may be referenced where applicable, but it is beyond the scope of this document to become a stand-alone requirements listing for ATM-CNS systems. The nation investing in their respective system may also have to prioritize critical capabilities or rely on partner nations (or a larger NATO support construct) to provide enabling capabilities. These determinations should be regarded as unique to each nation and specific deployment scenario.

1.3.1   Any discussion or depiction of specific deployable systems is not intended as support or favor of any specific contractor or vendor. It is intended for informative purposes only in describing the minimum required functions of ATM services.

1.4.   Deployment Timelines: STANAG 7216 AATMP-02 defines a staged approach to deployed ATC services include incremental levels of ATM service and capabilities and equipment. Derived equipment and number of certified personnel will be significantly affected by the required timeline for deployment and expected level of service. NATO approaches deployed ATM-CNS systems in an incremental fashion with emphasis placed on transitions to sustained operations.

1.5.   Applicable NATO Standards: STANAG 7210 and associated AEP-68 *Guidance in the Selection of STANAGs for Deployed Air Operations Services*, provides general guidance for deployed air operations services by highlighting other applicable STANAGs.

1.6 **Maintenance**: Maintenance of the numerous communication equipment components and power production are just two of the support areas that are required to ensure that ATM-CNS systems remain operable.

1.7. **Transportation**: Air transport is the primary mode for the deployment of ATM-CNS systems.

CHAPTER 2	MOBILE VISUAL CONTROL ROOM (MVCR)

2.1.   Capabilities: A Mobile Visual Control Room (MVCR) provides Aerodrome control service. Some nations might also refer to a MVCR as a Deployable Air Traffic Control Tower.

2.2.   Minimum Equipment Requirements

2.2.1. The MVCR should be self-sufficient in terms of both electric power and radio communication.

2.2.2. The minimum communication equipment recommended should be in accordance with STANAG 7216 AATMP-02, Annex B:
- UHF
- VHF
- Dedicated emergency frequencies
- Separate frequencies for different sectors/positions as required
- Backup/ last resort radio(s)

2.2.3. Enable controllers sufficient radios to provide service to both military and civil aircraft as well as telephone communication to other facilities. Nations may want to use dual-capable VHF/UHF radios to allow redundancy and singular backups. NATO identifies provisions for both secure and non-secure communications as being essential. For a more detailed list of equipment refer to Annex A.

2.3.   Additional Considerations

2.3.1. Nations may want to consider providing physical and environmental protection for personnel and infrastructure.

2.3.2. Nations may want to consider providing additional equipment/systems in order to minimize safety and security concerns

CHAPTER 3	DEPLOYABLE APPROACH CONTROL

3.1. **Capabilities**: Deployable/Mobile Approach Control Unit provides approach control services to both military and civilian aircraft operating in the associated airspace.

3.2. **Minimum Equipment Requirements**

3.2.1. The Deployable/Mobile Approach Control Unit is self-sufficient in terms of both electric power and radio communication.

3.2.2. The minimum communication equipment is in accordance with STANAG 7216 AATMP-02, Annex B:
- UHF
- VHF
- Dedicated emergency frequencies
- Separate frequencies for different sectors/positions as required
- Backup/ last resort radio(s)

3.2.3. Enable controllers to provide service to both military and civil aircraft and have telephone communication to other facilities with the help of sufficient radios and landline equipment. For a more detailed list of equipment refer to Annex B.

3.2.4. Primary Surveillance Radars are able to provide coverage of at least 25 Nautical Miles (NM) from the Antenna, Secondary Radar (Beacon Interrogators) capable of at least 25 NM range and vertical coverage to at least 10,000 feet.

3.3. **Additional Considerations**

3.3.1. Nations may want to consider providing physical and environmental protection for personnel and infrastructure.

3.3.2. Nations may want to consider providing additional equipment/systems in order to minimize safety and security concerns.

3.3.3. Nations may want to consider using dual-capable VHF/UHF radios to allow redundancy and singular backups. NATO identifies provisions for both secure and non-secure communications as being essential.

3.3.4. Nations may want to consider the desirable number of controller positions based on the number of sectors/complexity that will be serviced.

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CHAPTER 4   DEPLOYABLE TACTICAL AIR NAVIGATION (TACAN)

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4.1.   Capabilities: TACAN can be utilized for en-route navigation as well as non-precision approaches to the runway.

4.2.   Minimum Requirements

4.2.1. Provide radio navigation information (slant range distance, bearing, and identification).
- Support at least 100 aircraft
- Coverage of 40 nautical miles (NM) Line-of-Sight (LOS)

TACAN with dual transponders and monitoring system can either be manportable or mounted on a shelter, but should be certified for IFR operations.

4.3.   Additional Considerations

4.3.1. Nations may want to consider a power plant (generator), a spare kit containing high failure items/components, and test/other support equipment to ensure continuous operations.

CHAPTER 5	DEPLOYABLE PRECISION APPROACH

5.1.   Capabilities: Precision approach provide lateral and vertical guidance to an aircraft approaching and landing on a runway.

5.2.   Minimum Equipment Requirements: Precision Approach Radar (PAR) and Instrument Landing System (ILS) meet a minimum of CAT 1 approach requirements.

5.3.   Additional Considerations

5.3.1. Nations may want to consider Ground Based Augmentation System (GBAS) Landing System (GLS).

ANNEX A.

MOBILE VISUAL CONTROL ROOM (MVCR)

Equipment Lists

MVCR Recommended Minimum Equipment List

	Equipment	Consider
1	Dual VHF/UHF Radio Tx/Rcv	3x UHF 3x VHF 243.0 Emergency frequency 121.5 Emergency frequency ATIS Backup(s)
2	FM Radio	Ground Communication interface
3	Voice Switch Radio Controls/remote tuning Landline (Phone) Integration (12 landlines)	Ease of Control and SA Contact with Adjacent ATC facilities/sectors and support: 1 Approach 2 Arrival 3 Base Ops 4 Fire Department 5 Watch Sup Line 6 CRASH NET – FIRE 7 CRASH NET – BASE OPS 8 CRASH NET – C2 9 CRASH NET – MEDICAL 10 Weather Office 11-12 Backups
4	ATIS recorder and auto playback	Desirable to incorporate into Voice Switch
5	Crash Phone	Immediate notification of Crash Fire Rescue, C2 and Hospital
6	Multi-Channel Legal Recorder with Playback	Safety/accident investigation. Immediate repeat button is

		also a significant SA enhancing feature
7	Facility Clock	Timekeeping
8	Weather Display	Anemometer readings and barometric pressure
9	Light/Flare Signal (prefer 2)	Comm-out backup
10	Strip Bays with Strip Holders	Flight Tracking
11	Adaptable Mount for Tower Radar Display	Typically provided/attached to an Approach Control
12	Table space for NAVAID Remote Status Indicator	Typically provided with TACAN/ILS
13	Binoculars	1x per controller
14	Flight Progress Strips	

MVCR Essential (E) or Additional (A) Support Equipment

	Equipment	**Purpose**
1	Backup Generators (E)	Dual Generator recommended
2	Automatic Transfer Switch (A)	(Commercial Power to Generator auto start function)
3	Uninterrupted Power Supply (A)	Battery Backup for uninterrupted operations
4	Power Compatibility (E)	50-60Hz 100V – 240V. All electrical equipment should be power type agnostic to accept various types of commercial power.
5	Radio Masts and Antenna Field (A)	Frequency Separation and improved Line of Site
6	Obstruction Lights (E)	STANAG 3346, *Marking and Lighting of Airfield Obstructions*
7	Dual UHF/VHF hand held radio with charger (A)	Emergency Backup, Notification to aircraft in case of Tower Evac

ANNEX B.

DEPLOYABLE APPROACH CONTROL

Equipment Lists

Deployable Approach Control: Recommended Minimum Equipment for Approach Control Facility

	Equipment	Purpose
1	Dual VHF/UHF Radio Tx/Rcv	1x UHF per position 1x VHF per position 243.0 Emergency frequency 121.5 Emergency frequency UHF and VHF Backup(s)
2	Controller Position(s)	2
3	Voice Switch Radio Controls/remote tuning Landline (Phone) Integration (5 landlines)	Ease of Control and SA Contact with Adjacent ATC facilities/sectors and support: 1 Tower 2 Base Ops 3 Watch Sup Line 4 Weather Office 5 Backup
4	Multi-Channel Legal Recorder with Playback	Safety/accident investigation. Immediate repeat button is also a significant SA enhancing feature
5	Facility Clock	Timekeeping
6	Weather Display	Anemometer readings and barometric pressure
7	Strip Bays with Strip Holders	Flight Tracking
8	Table space for NAVAID Remote Status Indicator	Typically provided with TACAN/ILS

Deployable Approach Control: Essential (E) or Additional (A) Support Equipment

	Equipment	Purpose
1	Backup Generators (E)	Dual Generator recommended
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4	Power Compatibility (E)	50-60Hz 100V – 240V. All electrical equipment should be power type agnostic to accept various types of commercial power.
5	Radio Masts and Antenna Field (A)	Frequency Separation and improved Line of Site
6	Obstruction Lights (E)	STANAG 3346, *Marking and Lighting of Airfield Obstructions*
7	Dual UHF/VHF Hand held Radio, with charger (A)	Emergency Backup, Notification to aircraft in case of Tower Evac
8	Heating Ventilation and Air Conditioning (E)	Equipment Protection

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