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NATO Structure – NATO International Staff

Purpose – Why are RPAS important to NATO

NATO RPAS Structure

NATO’s Standardization Efforts

NATO Alliance Ground Surveillance (AGS)

NATO RPAS Airspace Integration IPT
NATO Structure
“NATO’s interface with aviation community”

North Atlantic Council

Air Traffic Management Committee (ATMC)

NATO’s interface with civil aviation

Including:
- Procedures for safe and expeditious air operations;
- Airspace design, management and control;
- Provision of air navigation and airport services during NATO-led operations;
- Military-Military interoperability, standardisation and civil-military coordination;
- Airborne/ground aeronautical communication, navigation and surveillance (CNS);
- Remotely Piloted Aircraft/Unmanned Aircraft Systems.

NATO International Staff
International Military Staff
NATO Military Authorities

All matters related to use of airspace & operation of airports

NATO Military Authorities
Other NATO Committees, Bodies and Agencies

ICAO
EC/DG MOVE
EUROCONTROL
EDA
U.S. FAA
IATA
“Major world powers are expected to have much larger drone fleets by 2022, and unmanned systems could make up 50 percent of the aircraft of some militaries by 2030.”

“Projections that research and development spending on UAS — a key indicator of acquisition trends — will reach about $5.2 billion by 2022 for Western European countries, including France, Italy and Britain. But it notes that fiscal considerations could limit those nations.”

Source: Forecast International
NATO Standardization Activities

Airworthiness, Light VTOL (STANAG 4746)
Airworthiness, “Lite” UAS (STANAG 4703)
Airworthiness, Rotary Wing (STANAG 4702)
Airworthiness, Fixed Wing (STANAG 4671) Weapons Integ. (STANAG 4737)

Interoperability, (STANAG 4586)

Data Link (STANAG 4660)

ISR Data

Command & Control

Training (STANAG 4670)
Human Systems Integration (STANAG 4685)
**Airspace Integration**

**IPT**
- Short-Term Operational Solutions
  - SOPs
  - Exercise Programme
  - Engagement Teams
  - Diplomatic clearances
  - Trans-Atlantic link

**FINAS**
- Standards and Technical Enablers
  - Airworthiness requirements
  - Human Factors
  - Sense/detect and avoid
  - Criteria to mitigate safety risks

**ATMC**
- Procedures
  - Airfield operations
  - "Due regard" policy
  - Security - Counter UAS
  - OATTS
  - NATO Airworthiness Policy

**Capability Integration**

**JCGUAS**
- Technical Standards
  - Weapons employment
  - Standard interfaces for C2
  - Casualty evacuation
  - C-IEDs
  - Counter UAS
  - Cargo
  - Air-to-Air refuelling
  - Air-to-Air combat
  - Minimum Navigation Performance

**ATMC-C3B**
- CNS requirements
  - CNS equipage
  - PBN
  - Frequency spectrum

**Operational Interoperability**

**JCGUAS**
- Operational Standards
  - Concept of operations
  - Doctrine and TTPs
  - Employment standards
  - UAS Classification
  - Terminology
  - Integration in coalition operations
  - Crew training and employment
  - Logistics

**CNAD**
- Joint Main Armaments Groups
  - Defence against Slow and Small Unmanned Aircraft

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**Better Coordination - Better Synergies**
NATO is acquiring an Alliance Ground Surveillance (AGS) system that will give commanders a comprehensive picture of the situation on the ground;

As part of the AGS system, NATO will acquire five remotely piloted aircraft – Global Hawks and associated command and control stations;

In addition, UK and FR are providing “Contributions in Kind;”

Enables Alliance to perform persistent surveillance over wide areas from high-altitude, long-endurance, unmanned aerial platforms operating at considerable standoff distances and in any weather or light condition;

Main operating base will be located at Sigonella Air Base in Italy, which will serve a dual purpose as a NATO Joint Intelligence, Surveillance & Reconnaissance (JISR) deployment base and data exploitation and training centre.
Near-time and specific goals for UV14:

- Gain agreement from nations to activate and operate routing(s) for U.S. Global Hawk flights from Sigonella to neighboring nations in support of UV14;
- Agree to handle U.S. GH in accordance with any U.S./national bi-lateral agreements, NATO SOPs and other applicable national regulations.

Key Issues Identified

- AGS SOP Testing
- National Aviation Laws
- Diplomatic Clearance
- Airworthiness Certificates
- Safety criteria
  - Avoid Congested areas
  - Night flights
- Air traffic data
- Airspace structures
- Contingencies
- Divert Airfields
- Ditching Points
- Transfer Control Points
- Frequency Clearance
- Aeronautical Information
- Flight Plan
- Plotting of detailed route and contingencies
- Timelines – detailed travel time
- Use current procedures – Use airspace as per AIP
- RPAS Airspace Integration
  - Procedures
  - Areas
  - Cooperation with EUROCONTROL/NM

- Major exercise agreed at NATO SUMMIT held in Chicago, USA, 2012
- TRJE15 LIVEX part will take place between 21Oct and 05 Nov 2015 in the airspace of Portugal, Spain, France and Italy.
- Practice close cooperation, coordination, and liaison with Host Nations and local authorities, as well as international and non-governmental organizations, within the context of NATO's contribution to a Comprehensive Approach.
Standard Operating Procedures (SOPs) for the Airspace Integration of Military RPAS

Chapter 1 – General Guidance
- Purpose
- Applicability and Scope
- Organisation and Command Definitions
- Interpretation of Words
- National Arrangements
- Crewmember Responsibility
- Deviations
- Waivers
- Applicability

Chapter 2 – Operating Procedures
- General
- Operational requirements and Air Traffic Rules
- Access to airspace
- Mission Planning
- Airfields
- Ground Operations Departure and Arrival
- En-route flights
- Collision Avoidance
- Communications, Navigation and Surveillance Functionalities
- Radio Communication between Pilot-in-Command and ATC

Chapter 3 – Emergencies
- General guidance for Emergency situation
- Diversions
- Contingences

Chapter 4 – Documentation and Aeronautical Information
- En-route Chart and Approach Procedures
- Approaches,
- Departures and Go-arounds
- Termination Points

Short-term operational solutions for airspace integration

Coordination and Cooperation through liaison with NATO
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