BUILDING A PERFORMANCE-BASED REGULATORY ENVIRONMENT FOR RPAS OPERATIONS - ARE STATES READY?

Airports Authority of India

RPAS

Unmanned aircraft which is piloted from a remote pilot station

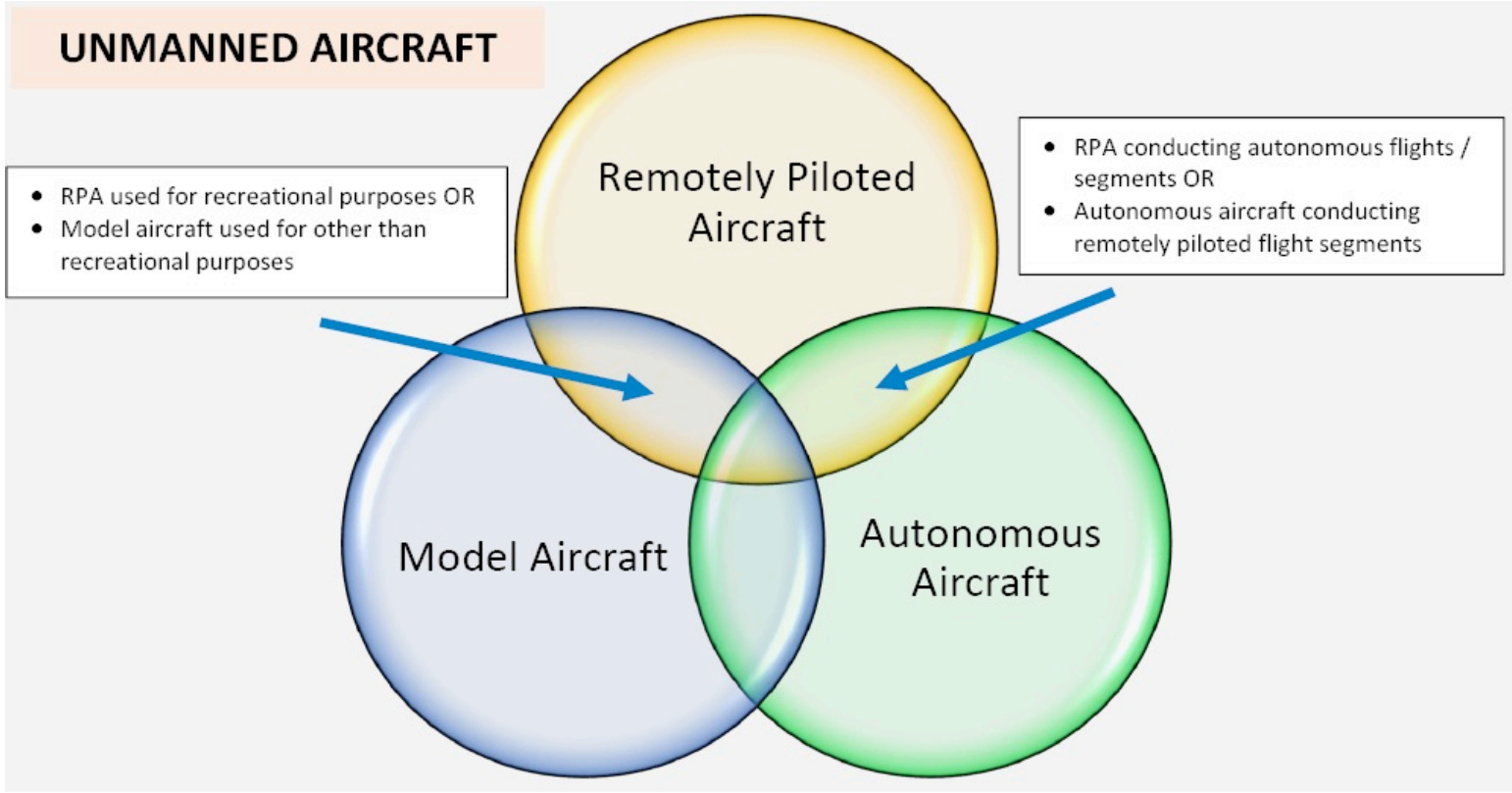
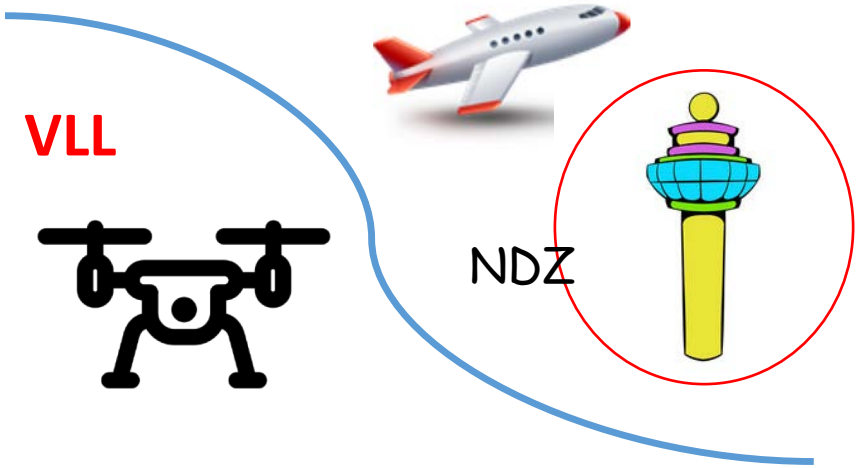


Figure-1 (Courtesy ICAO)

RPAS Regulations

- USA, UK, France, Australia, Brazil, Canada, Qatar, Singapore, South Africa, Japan, Spain ….

- Segregation is the keyword now…..and integration is the future.



ASBU	B1-RPAS	Initial Integration
	B2-RPAS	RPA Integration in Traffic
	B3-RPAS	RPA Transparent Management

Prescription or Performance?

Compliance-Based Regulations

- Standards and Rules are set for compliance
- Rigid, need to make rules for every eventuality
- Not easily adaptable to dynamic environment

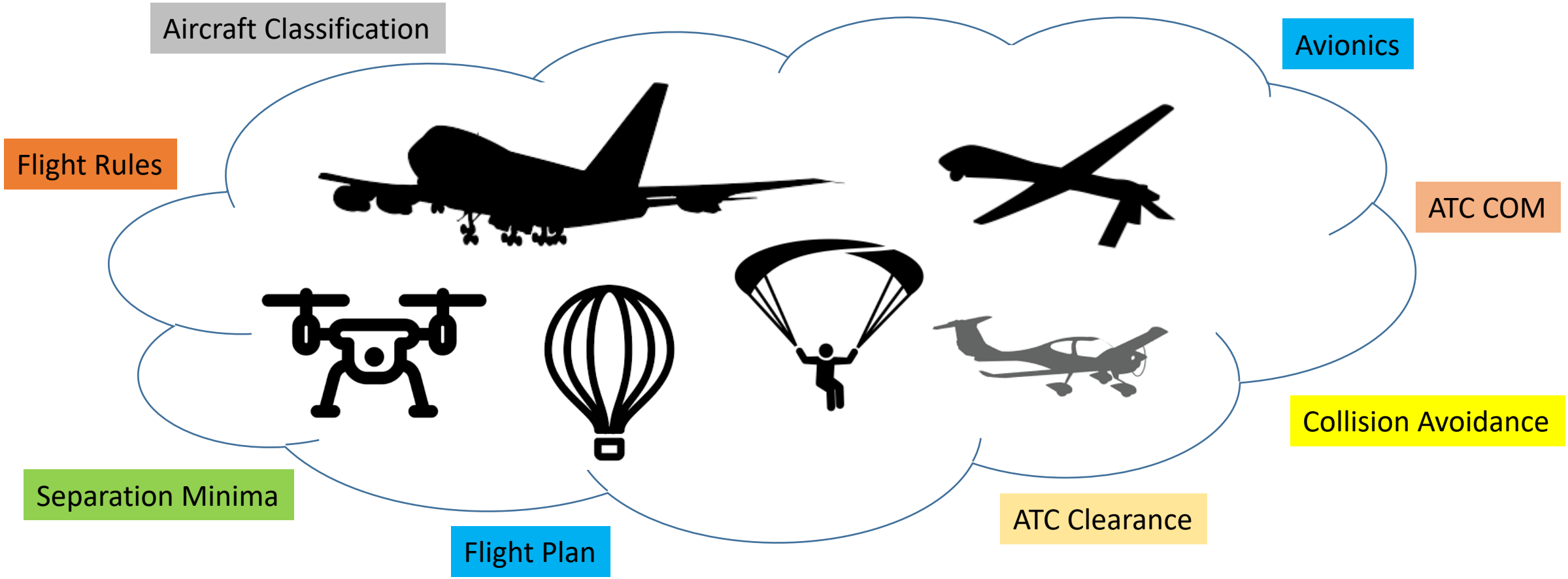
Performance-Based Regulations

- Desired performance levels are set
- Flexible, as focus is on outcome
- Easy to cater to changes

Prescription or Performance?….

CBR for RPAS

ONE-SIZE-FITS-ALL Approach?



PBR for RPAS

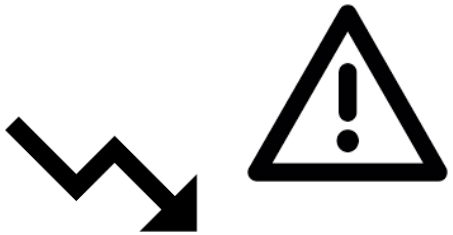
Acceptable Level of Safety Performance (ALoSP)

PBR: Factors for Success

- Level of maturity of existing CBR
- Level of maturity of SSP and SMS
- Adequate resources for oversight

Integration

Accommodation by Segregation



Minimum requirements ignored

Focus only on safety performance objectives

RPAS Regulations in India

- CAR on *Requirements for Operation of Civil RPAS*
- Compliance-based, tightly regulated
  - All RPAS in Controlled Airspace needs approval from ATC
  - Micro/ Nano RPAS below 200 ft/ 50 ft AGL in uncontrolled airspace exempted
  - RPAS operations not allowed around airports and sensitive areas
- Enforcement through Digital Sky Application
  - Registration of RPAS, Operators and Remote Pilots through Digital Sky
  - RPAS operators to plan flight profile through Digital Sky
  - No Permission No Take-off (NPNT) functionality

Restructuring of VLL Airspace

- Very Low Level airspace
  - Typically below 1000 ft AGL
- Mostly used by
  - manned and tethered balloons
  - Kites, paragliders, paramotors
  - Model aircraft
  - Unmanned Aircraft
- Use of VLL airspace by unmanned aircraft is on the rise.
- In near future, VLL airspace will be managed through UTM systems

Restructuring of VLL Airspace….

- Regulations mandate ATC approval for all RPAS flights in controlled airspace.
- Control Zones (CTR) extend laterally to distance varying from 5 to 30 NM from ARP/NAVAID of the aerodrome.
- Even at very low levels upto a significant distance from the airport, ATC is obliged to provide services commensurate with Class D airspace.
- India is contemplating reduction of CTR radius to 5 / 10 NM for releasing lower levels for RPAS operations as Class-G airspace.

Summary

- Compliance-based RPAS Regulations published recently
  - Early for a transition to PBR
  - Combination of CBR and PBR for a few years
  - Transition to PBR before complete integration
- India will continue to support ICAO for safe and expeditious integration of RPAS into controlled airspace

Thank You