



Building the future RPAS industry

Comments on the EU Roadmap

.....the long road ahead.



The Challenges?

- SMEs – First into the industry/Not all will succeed
- Larger corporations will need time to assimilate the changes and adjust their strategies
- The Regulators challenge
 - Disruption, technology, aircraft to operation etc.
- The Achilles Heel?
 - Regulators are nationally bound
 - Sovereignty - the global brake
 - EASA – transnational regulator - a unique opportunity?

RPAS Industry - who we are



- Operators
 - National and Trans-national Operators (Global players appearing)
- Manufacturers
 - European and overseas (e.g. China)
 - System or service centric?
- Service Providers
 - Provision of RPAS Services to other industries
 - ATM/UTM Service Providers
 - Telecommunications Companies
 - Information Technology Companies
 - Insurers, Lawyers, Accountants etc.

Industry – and a whole lot more



- Industry Standards Bodies
 - Large corporation mentality not suited to rapid change
 - Industry led standards lack RPAS representative industry involvement
 - Niche players with credible interim solutions
- Trade Associations
 - Voice for members, differentiation of members into operators, manufacturers not yet clear
 - Members benefits – collective voice of industry
- Qualified Entities
 - Coping with change, coping with demand by making 'operational centric' and 'performance based' regulation work in practice ... not just on paper!

... and the Regulators

... safeguarding the public on many issues not just aviation and safety

Why a Roadmap?



- A common picture, snapshot in time.
- Contains the assumptions base in simple terms for the many stakeholders who need to understand.
- Captures the “autoroutes” and gives context to the A roads and minor roads plus some as yet to be discovered off-road activity or built.

Regulatory Areas - Operator Centric Approach



- Principles
- Performance Requirements
- Industry Standards

A major change in the way we all must think



- Shift from the current prescriptive aircraft focused approach to a performance based and operation centric approach.
- A new categorization of OPEN, SPECIFIC and CERTIFIED for low to high risk.
- A Risk based approach (first muted in the JAA/Eurocontrol UAV Task Force!)
- Development of an Institutional framework for new functions and technologies i.e. “Geo-fence”, “Detect and Avoid”
- New product requirements for mass produced drones, mainly intended for low risk operations.

ATM/UTM

A major challenge with great rewards



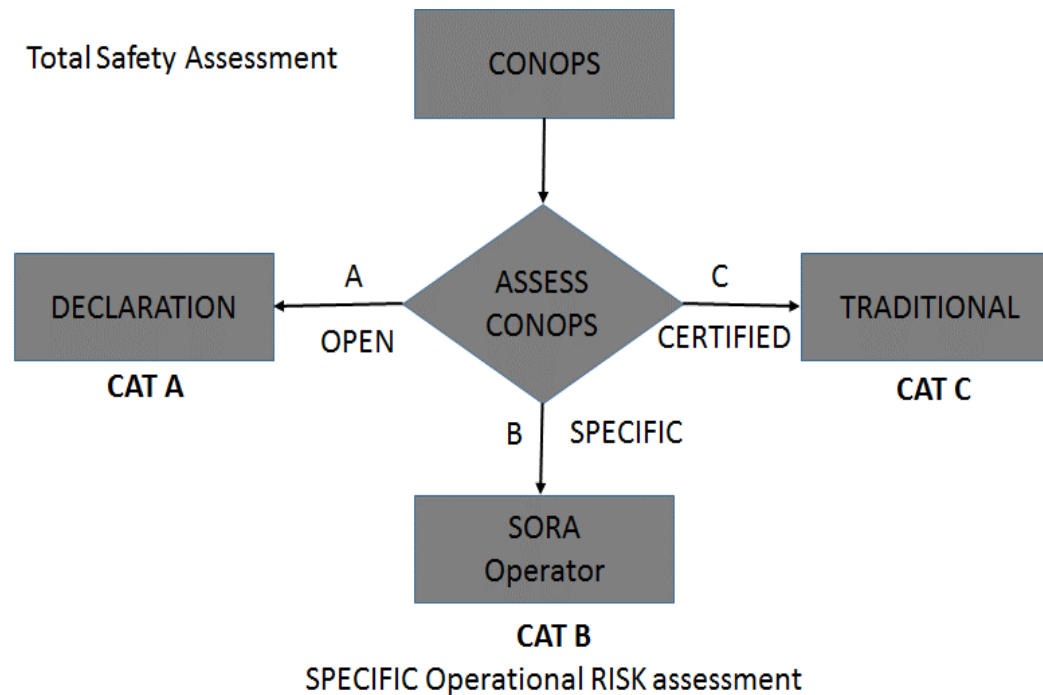
- Traditional ATM can be expected to support the current Air Transport view of life for many years to come.
- The development and maturity of the UTM view may require some expectation management from operators that have never been involved in these kinds of things before.
- The ATM CONOPS envisages Class I, II and III at low level below 500ft; this will challenge our perceptions of pilots, aircraft equipage and air operation safety criteria with reliance on new technologies.
- This will require Operators, manufacturers and service providers to be clear at the outset what CONOPS they wish to work towards.



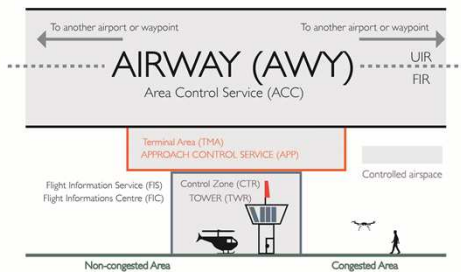
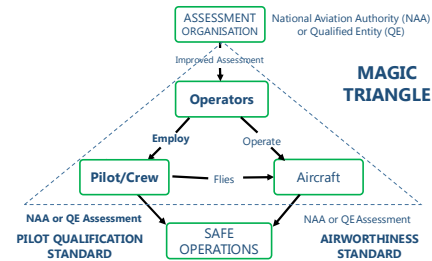
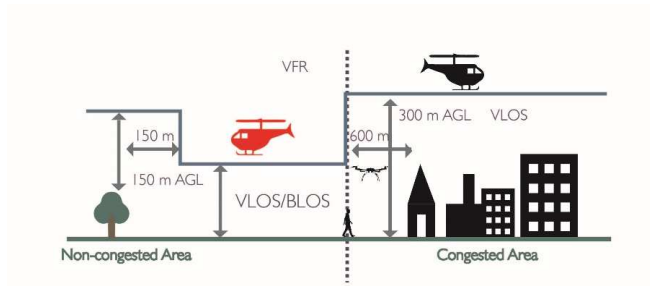
Proposed Risk Based Approach

CATEGORIES	OPEN	SPECIFIC	CERTIFIED
Airworthiness	Nothing	Risk mitigation	Certificates
Licensing	Nothing	Specific Training	Licence
Organisations	None	Industry attestation	Approval
C2	Nothing	Specific Demonstrations	Certified
D&A	Nothing	Industry attestation	Certified

CONOPS and Safety Operational Risk Assessment (SORA)



We all have our pictures of the future



Now we must all come together to build a common picture that we can all work to....



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QUESTIONS?