

SOUTH AFRICAN CIVIL AVIATION AUTHORITY (SACAA)



ICAO RPAS SYMPOSIUM

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***23 – 25 March 2015
Montreal, Canada***



Overview

- SACAA Obligations
- Regulatory Approach
- RPAS Regulations
- Applications of RPAS in South Africa
- Current and Anticipated Challenges
- Conclusion



SACAA Obligations

- SACAA is a public entity reporting to Department of Transport
- In terms of section 72 of the Civil Aviation Act, 2009 (Act No 13 of 2009) the SACAA is required, amongst others, to:
 - Control and regulate civil aviation safety and security
 - Oversee the implementation and compliance with the National Aviation Security Programme
 - Oversee the functioning and development of the civil aviation industry
 - Develop any regulations that are required in terms of the above mentioned Act
 - Monitor and ensure compliance with the Act and the Chicago Convention



SACAA Obligations

What is the overall responsibility of the SACAA?

- Amongst other requirements, to manage:
 - Safety of people and property on the ground
 - Safety of other airspace users
 - Aviation security



Amos



Regulatory Approach

- Buy new “thinking caps”



- Asked the following questions:
 - What is the overall responsibility of the SACAA?
 - What are the safety hazards introduced/inherent to the RPAS?
 - What are the resulting risks?
 - What are the possible mitigating factors/mechanisms?





Regulatory Approach

- **Operation-centric**
operational specifications should be the main driver of regulatory requirements
- **Objective**
not open for interpretation and non-subjective
- **Systematic**
two similar operations with similar safety risks should have similar requirements
- **Practical**
should not be prescriptive (rather be soft-law)
- **Cost-conscious**
over-regulation will inflate operational costs



Regulatory Approach

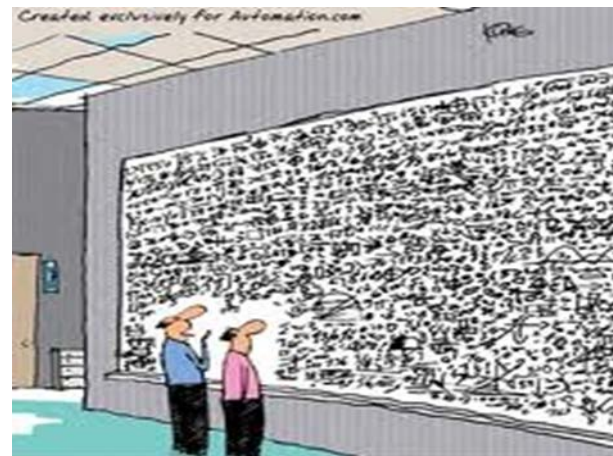
- Involve local stakeholders
State organs, military, ANSP, Airports Operators, Universities, Research Institutions, RPAS Manufacturers, UAS association, and Prospective Operators in general
- Categorized risks into three levels

- Low risk

- High risk

- Medium risk

(Anything between low and high risk)



“...and that, in simple terms, is my idea on how to increase factory optimization. any questions?”



Regulatory Approach (RPAS classification)

Classification is achieved through 5 parameters:

- Mass of an RPA
- Impact energy of an RPA
- Operational height above the ground
- Rules of flight
- Area of operation

Resulted in 4 different “groups” or “classes”



Regulatory Approach

Low-risk operations

- Class 2 or lower
- Outside of controlled airspace
- Within visual line-of-sight
- Day operations
- Full compliance with applicable ATM rules
- Away from people, property and public roads
- At least 10 km away from an aerodrome

Medium-risk operations

- Doesn't comply with at least one limitation of low-risk operations

High-risk operations

- Complex in nature



Regulatory Approach (RPAS classification)

Class	RPAS Classification			
	<u>Line-of-sight</u>	<u>Energy (kJ)</u>	<u>Height (ft)</u>	<u>MTOM (kg)</u>
<u>Class 1A</u>	<u>R-VLOS/VLOS</u>	<u>E < 15</u>	<u>h < 400</u>	<u>m < 1.5</u>
<u>Class 1B</u>	<u>R-VLOS/VLOS</u>	<u>E < 15</u>	<u>h < 400</u>	<u>m < 7</u>
<u>Class 1C</u>	<u>VLOS/E-VLOS</u>	<u>E < 34</u>	<u>h < 400</u>	<u>m < 20</u>
<u>Class 2A</u>	<u>VLOS/EVLOS</u>	<u>E > 34</u>	<u>h < 400</u>	<u>m < 20</u>
<u>Class 2B</u>	<u>Experimental/Research</u>			
<u>Class 3A</u>	<u>BVLOS</u>	<u>E > 34</u>	<u>h < 400</u>	<u>m < 150</u>
<u>Class 3B</u>	<u>VLOS/EVLOS</u>	<u>Any</u>	<u>h > 400</u>	<u>m < 150</u>
<u>Class 4A</u>	<u>BVLOS</u>	<u>Any</u>	<u>h > 400</u>	<u>m < 150</u>
<u>Class 4B</u>	<u>Any</u>	<u>Any</u>	<u>Any</u>	<u>m > 150</u>



RPAS Regulations

Consists of six sub-parts:

- Sub-part 1: General
- Sub-part 2: RPAS approval and registration
- Sub-part 3: Personnel licensing
- Sub-part 4: RPAS operators certificate
- Sub-part 5: RPAS operations
- Sub-part 6: RPAS maintenance

RPAS regulations are anticipated to be implemented in April 2015



Applications of RPAS in South Africa

- Agriculture (crop dusting, pest & disease control)
- Game reserve (monitoring, control & anti-poaching)
- Law enforcement and security (rail network, cable theft, criminal activities)
- Mining (stock pile calculations, survey, terrain mapping)
- Power line inspections
- Film industry
- Transportation of medical samples



Challenges

- Introduction and implementation of RPAS regulations
- Enforcement against illegal operators
- Use of RPAS for criminal activities
- Use of non-aviation spectrum
- Introducing aviation to non-aviators
- Security risks and threats



Conclusion

- Proposed RPAS regulations are just a start

Where to from here:

- Expand RPAS regulations to include other types of operations
- Align SACAA RPAS integration plans with national strategies
- Currently, in a process to develop integrated national enforcement strategy
- Develop a comprehensive RPAS integration roadmap
 - Taking into consideration ICAO and international developments

Thank you!





Part 101 snapshots

Summary of subpart 1:

- Four types of operations:
 - Commercial
 - Corporate
 - Non-profit
 - Private

- Limited to Class 1 and 2:
 - Less than 20kg
 - Line-of-sight
 - Below 400ft AGL
 - Low speed

Summary of subpart 2:

- RPAS will be issued an RLA
- RPAS will be issued a C of R



Part 101 snapshots

Summary of subpart 3:

- Pilots will be issued with an RPL
 - Aeroplane
 - Helicopter
 - Multi-rotor
- With the following ratings
 - VLOS
 - EVLOS
 - BVLOS
- Following successful theoretical examination and skill test

Summary of subpart 4:

- Operators need to apply for an ROC
 - Commercial
 - Corporate
 - Non-profit
- Some of the requirements
 - Ops manual
 - OpSpec
 - SMS
 - Security