Legal open issues and main perspectives

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Reduced crew: main legal issues

- Liability (Civil and Criminal)
- Security
- Privacy/Data protection
- Labour Law (Crew Monitoring systems, discrimination)
Liability: Implications of automation

- Delegation of task from operators to technology
- Humans as controllers and supervisors
- Machine intelligence and autonomy (= independence + cognitive skills)
Civil Liability: impacts of automation

- liability for damage caused by technological failure transferred to
  - the organisation developing the technology
  - the organisation using the technology
  - the organisation maintaining the technology

- Grounds for the attribution
  - Product liability
  - Liability for the provision of services (e.g. wrong information)
  - generation of risks and ability to prevent them (and possibility to distribute losses)
  - vicarious liability (for faults of employees)

- individual liability of the individual operator would persist only when the operator acted
  - with an intention to cause harm or damages or
  - with recklessness
Product liability: some issues

A product may be considered defective in case of:

1. Design defect: safety of the design is tested with respect to state of the art – role of safety standards
2. Informational defects: information on how technologies work is crucial (e.g. training, manuals)
3. (Manufacturing defects)

When high automation is introduced, traditional channelling of liabilities (towards air carrier - Montreal Convention of 1999) may not work: manufacturers may be on the front line
Standards and liability of manufacturers

- according to EU law, safety standards may constitute a reference for defectiveness.

- Publicly approved standards: compliance does not exclude liability, while a violation generally implies liability

- Private standards: compliance is voluntary, but it may facilitate proof of safety
Civil and criminal liability of crew / ATCOs

ICAO Annex 2, "Rules of the Air"

- par. "2.3.1 Responsibility of pilot-in-command"
- The pilot-in-command of an aircraft shall, whether manipulating the controls or not, be responsible for the operation of the aircraft in accordance with the rules of the air, except that the pilot-in-command may depart from these rules in circumstances that render such departure absolutely necessary in the interests of safety.

- Annex 2, par. "2.4 Authority of pilot-in-command of an aircraft"
- The pilot-in-command of an aircraft shall have final authority as to the disposition of the aircraft while in command.

- "pilot-in-command" what could mean with reduced crew?
  - Pilot
  - Technology
  - ATCOs / other actors
ALIAS Project

► Addressing the Liability Impact of Automated Systems

► Co-financed by EUROCONTROL on behalf of the SESAR Joint Undertaking as part of Work-Package-E

► DeepBlue and the European University Institute

► FOCUSED on the legal implications of automation in complex socio-technical systems

► products:
  - The Network of Legal Research in ATM
  - The Legal Case
  - The ALIAS Digital Library
The Legal Case

- Is the novel methodology for **proactive** identification and **management** of the **liability issues** of new automated systems for aviation and ATM.

- Is applicable to **any aviation concept** involving automation, namely the use of an automated technology.

- Can produce different kinds of results, such as **recommendations to inform the design** or **legal design measures**, to undergo acceptability assessment by the stakeholders.

- Is currently **under validation** through test applications with aviation stakeholders.
Thanks!

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Thank you