



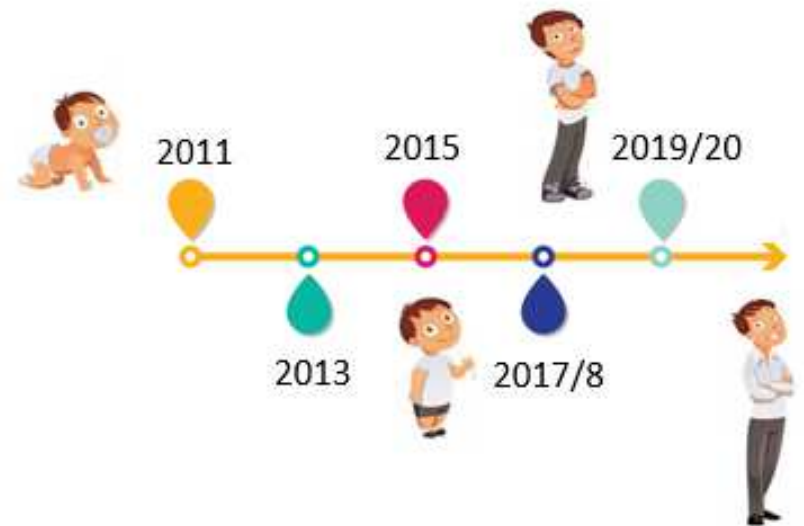
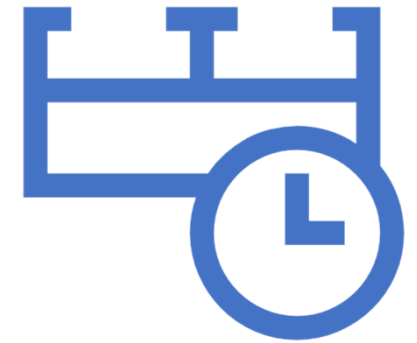
EMBRAER

STAMP: The strategy of Organization as a System

Ricardo Moraes – Head of Systems Engineering at EMBRAER S.A



Timeline





How to improve?

PSASS Nancy's Lab

EMBRAER / MISTI
(MIT) Internship
Program

MITsdm Spring Team
Project

MITsdm
Spring Team Project



Partnership for Systems Approaches to Safety
and Security (PSASS)



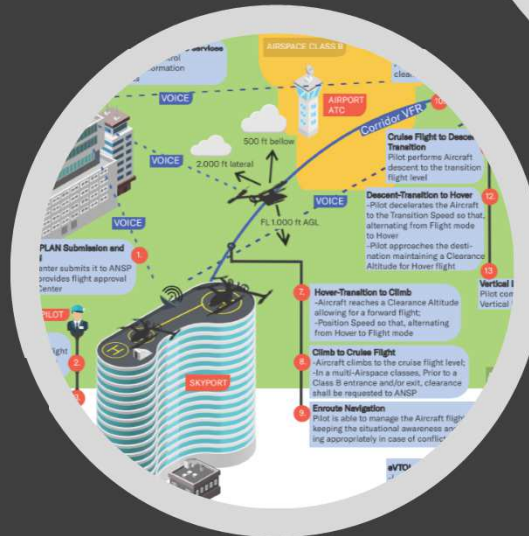
MASSACHUSETTS
INSTITUTE OF
TECHNOLOGY



History

Organization Structure

- Landing Gear Benefits
- External lights optimization
- Cybersecurity context analysis
- UAM Operational context
- Certification Approach



Different Perspective

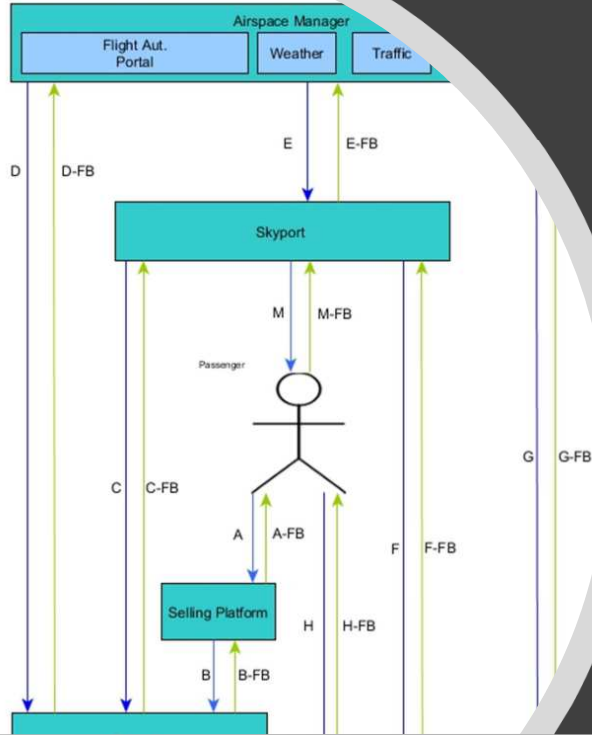
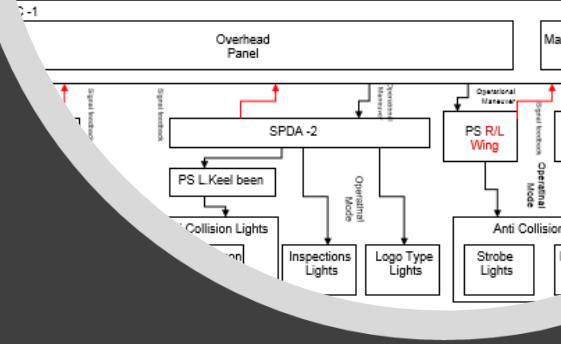
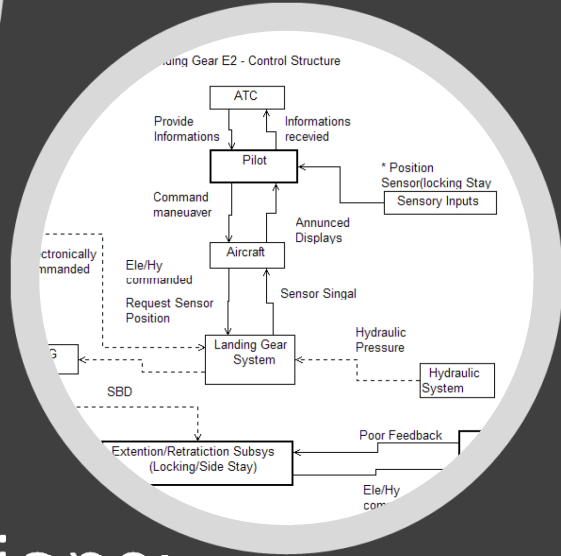
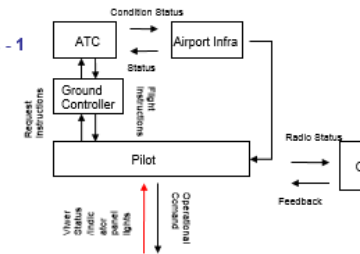
- Systems Engineering Team
 - Systems Approach
 - Systems Architecting Process
 - STAMP
 - STPA
 - STPA-SEC
- Safety Team
- CyberSecurity Team
- Systems Architects
- Systems Engineers



Responding Safety Constraints

Control Actions	Resulting Safety Constraints
Maneuver when aircraft is out of phase	Pilot must be provided with information for aircraft operating in phase
Maneuver when aircraft is not in phase	Pilot must be provided with information for aircraft operating in phase
Maneuver before action(LG System)	Pilot must be provided with information for aircraft operating in phase
Maneuver (Locking/Side Stay)	

RENDERED SAFETY ANALYSIS STRUCTURE FOR A/C - 1



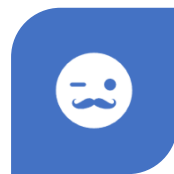
Conclusions:

1. Start with Safety Specialists **NO**
2. Start without a sponsor **NO**
3. Start without a real problem and Project. **NO**
1. Systems Engineering Team.
2. STAMP FACILITATOR. – real problem and Project
3. Sponsor **NEEDED**
4. Safety, Security And CyberSecurity on the Architecting Structure in the Organization.

Conditions	Given Incorrectly	Wrong Timing Order	
Ele/mandated s.	<p>Pilot not provide the maneuver when aircraft stay in landing phase. [Not Hazardous]</p> <p>Extention/Retraction Subsys (Locking/Side Stay) Not Provide ELE/HY system command when Aircraft is Stopped. [Not Hazardous]</p>	<p>Pilot provide maneuver when aircraft is out of landing phase. [1]</p> <p>Extention/Retraction Subsys (Locking/Side Stay) Provide ELE/HY system command when Aircraft flying in out of landing phase [5]</p>	<p>Pilot command maneuver when aircraft is not in landing phase yet. [5]</p> <p>Extention/Retraction Subsys (Locking/Side Stay) Wrong Timing ELE/HY system command when aircraft is not in landing phase. [5]</p>



THANK YOU



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