

Automation Activities that support C2 Agility to Mitigate Type 7 Risks

NORMAN K. MA

PAPER 019

19TH ICCRTS, ALEXANDRIA, VIRGINIA, 2014

The author's affiliation with The MITRE Corporation is provided for identification purposes only, and is not intended to convey or imply MITRE's concurrence with, or support for, the positions, opinions or viewpoints expressed by the author.

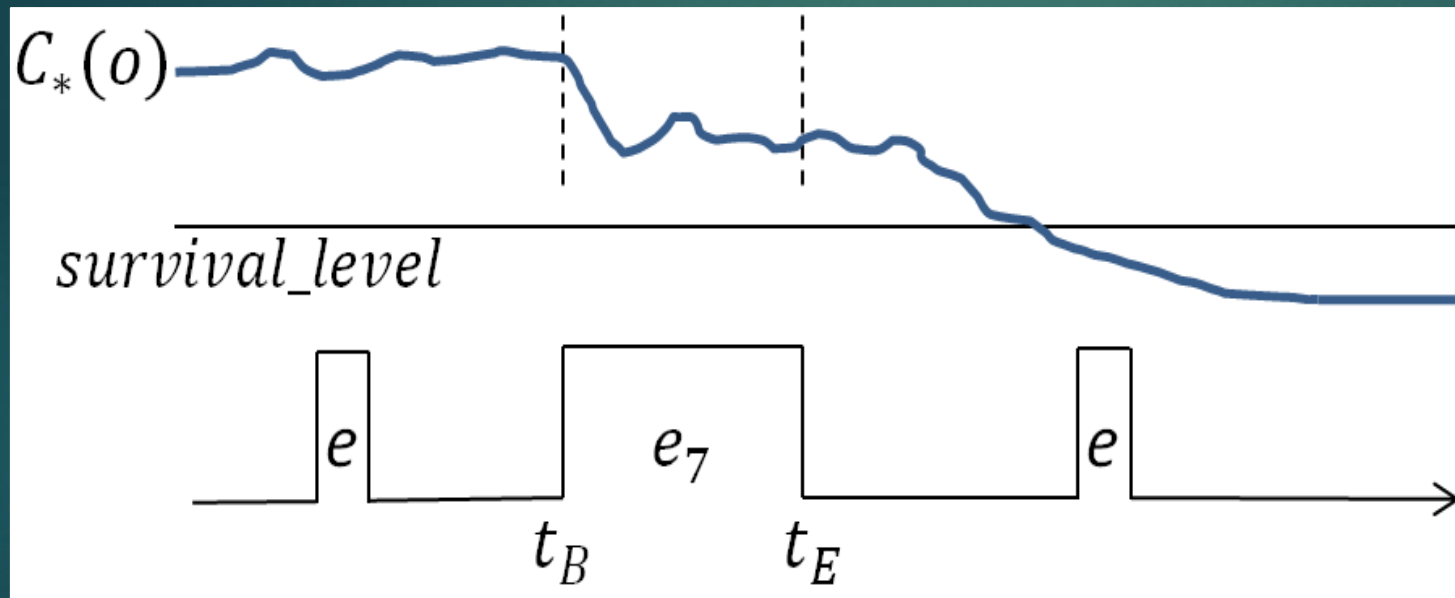
Type 7 risks are low probability and high impact



- 1,000 year flood
- Large meteorite hits Earth
- Terrorists fly airplanes into buildings
- CEO dies of heart attack on business trip
- Space ship runs into space junk

What are the probabilities for these events in a 45-year career time frame?

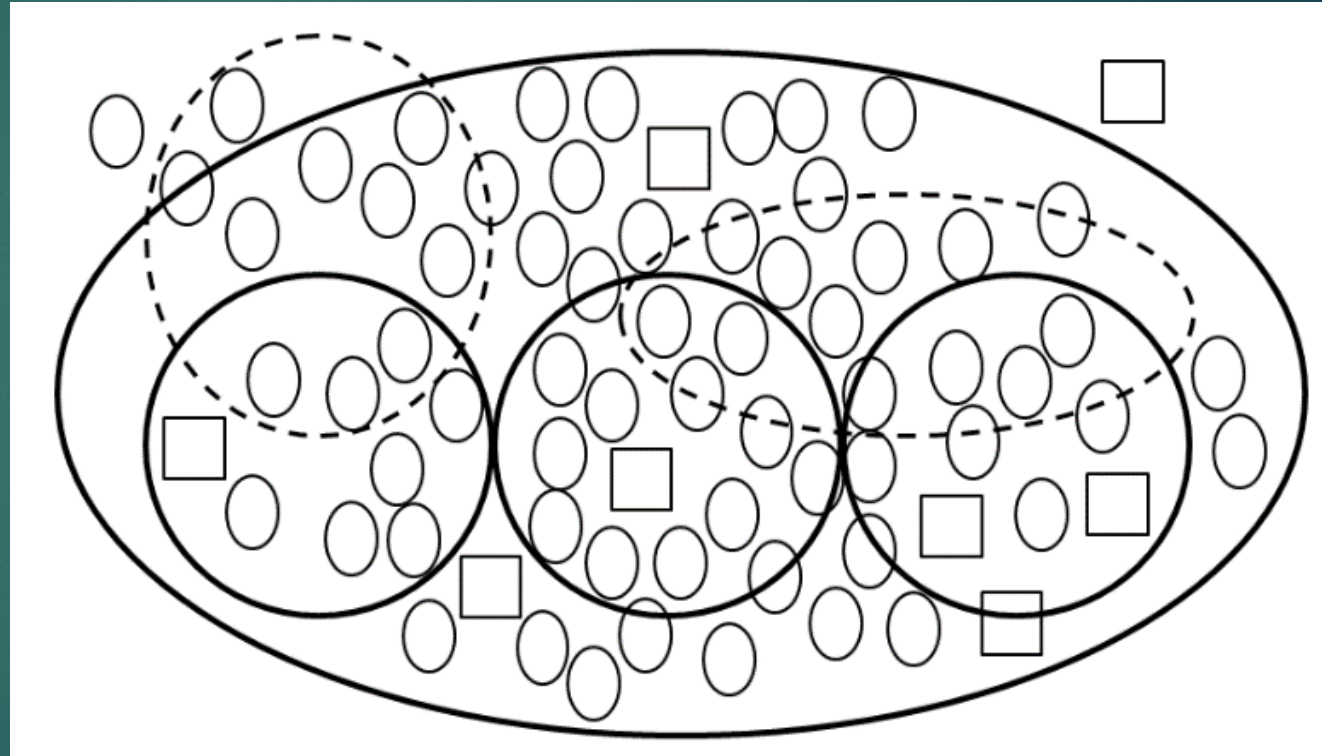
Event that causes organization failure



Organization health are affected by multiple internal and external events.

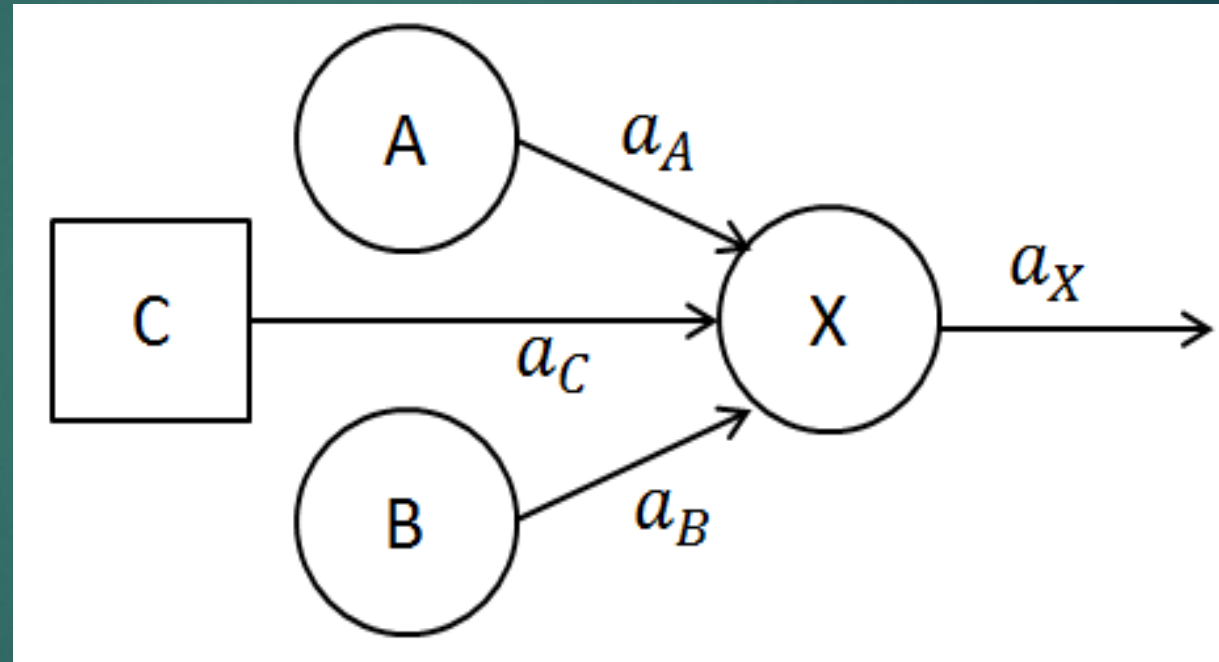
Organization Representation

Organization is composed of explicit and implicit individuals and machines



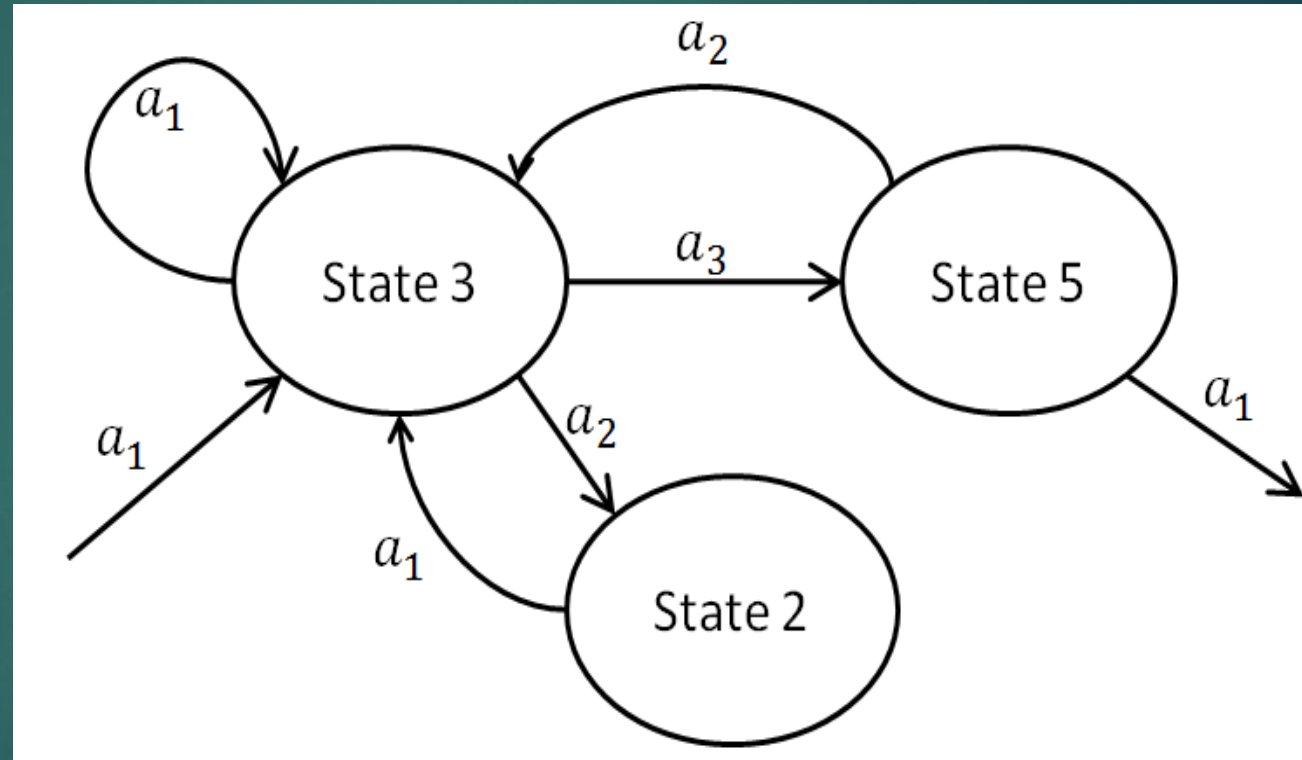
An Organization Representation Entity Activity Diagram (EAD)

A simple C2
organization
representation that
information system
understands



State-Space Diagram Common Agility Space (CAS)

A simple C2 organization representation that information system understands



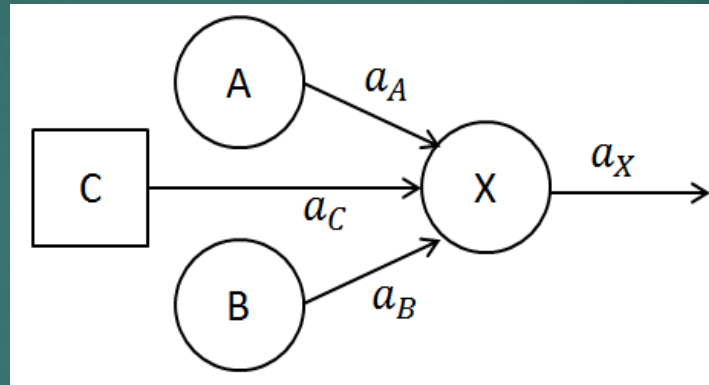
Organization Representations and Battle Domains

Automation systems are able to represent organization at various battle domains

	EAD	CAS	OODA
Social	X	X	X
Cognitive		X	X
Information		X	
Physical	X	X	

Organization Representations and Battle Domains

Automation systems can assist human to manage C2 organization



Which entity can emit effective actions?

Is the organization is a desirable state?
Suggested actions for improvement

