BRITISH AIRWAYS

Managing Human Factors Risk

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General Manager Training

British Airways Flight Operations

Overview

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What is Risk Management?

How do we manage risk in Flight Operations?

Safety Culture

Management Recognition Tools

Operational Mitigation Tools

Training/Feedback

Safety is *No* Accident

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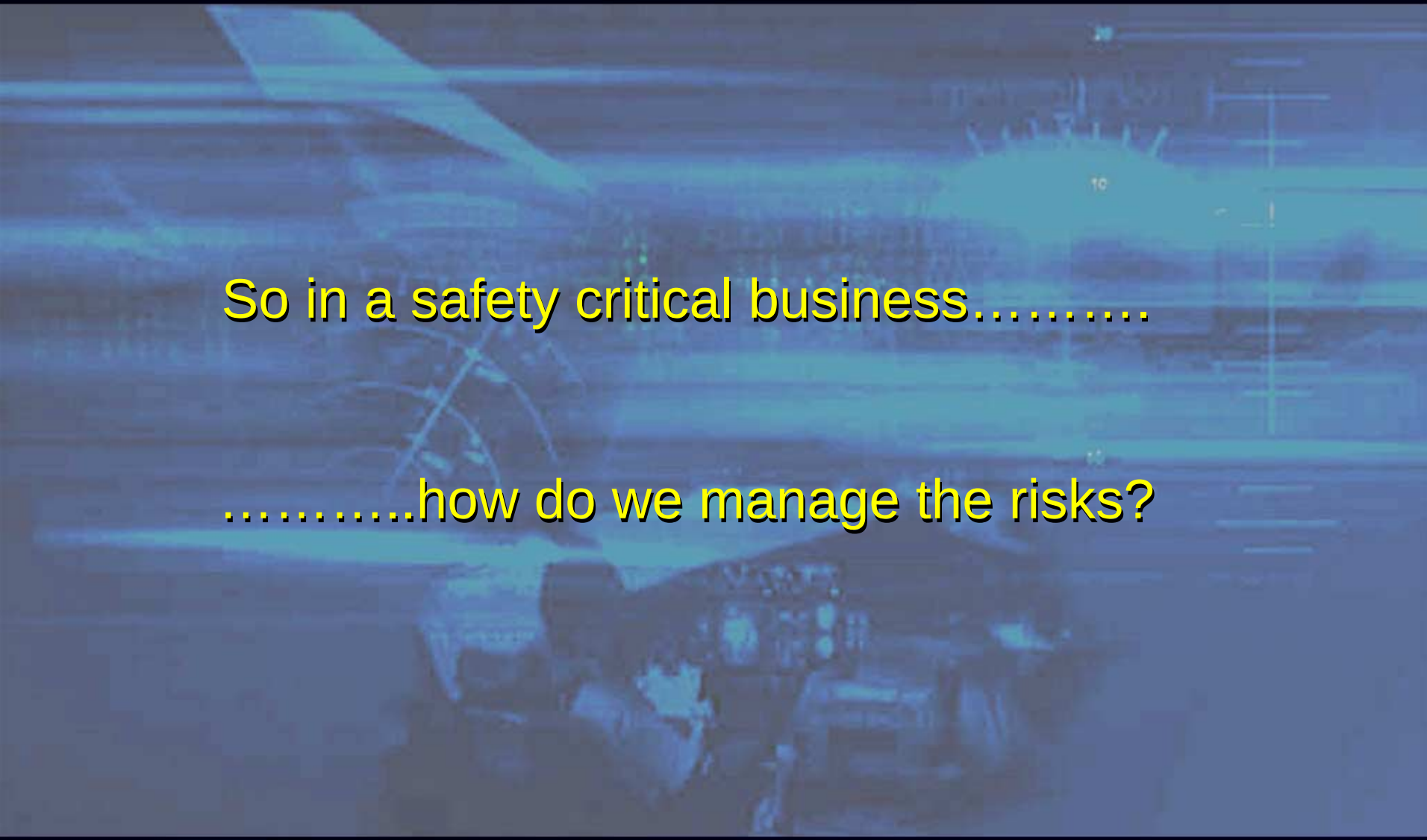

So in a safety critical business…….

…….how do we manage the risks?

Effective Risk Management

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Organisation

Procedures/Technical

Training

Data

Layered Defences

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Safety Threats

Layered Defences

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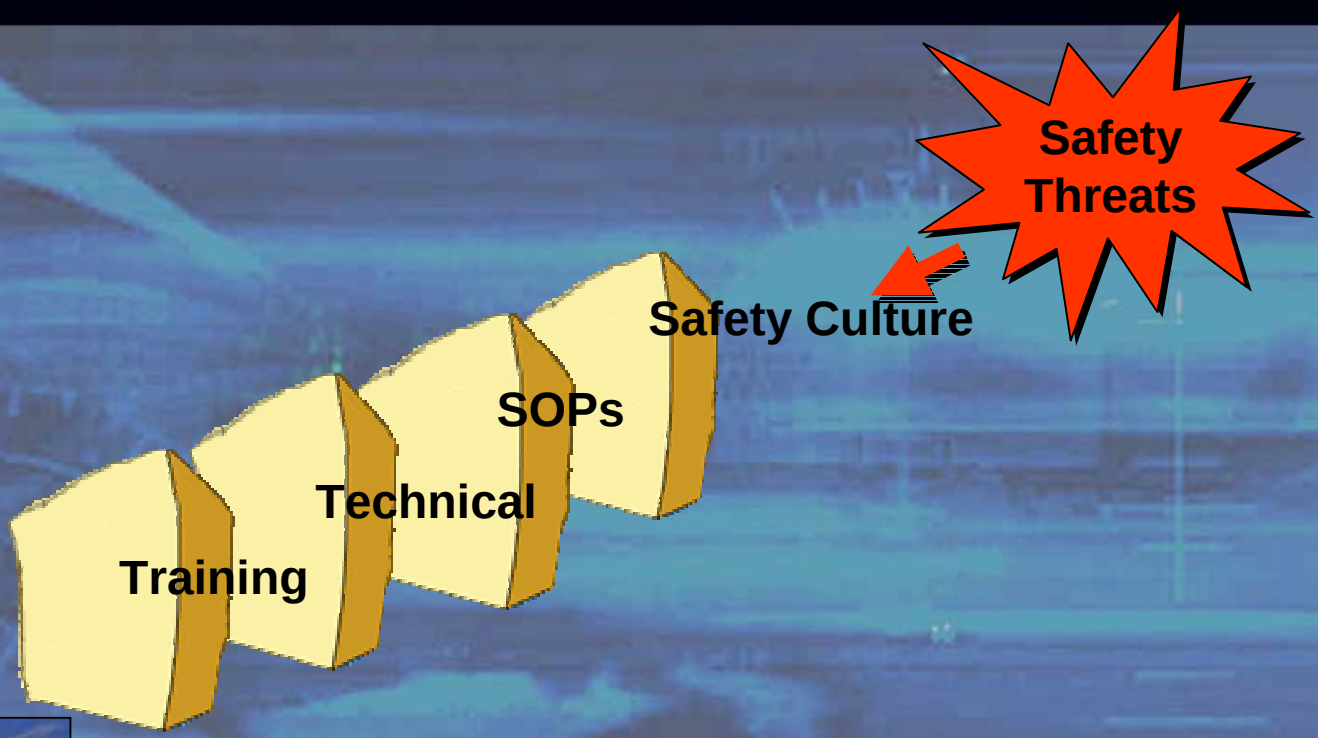

Layered Defences

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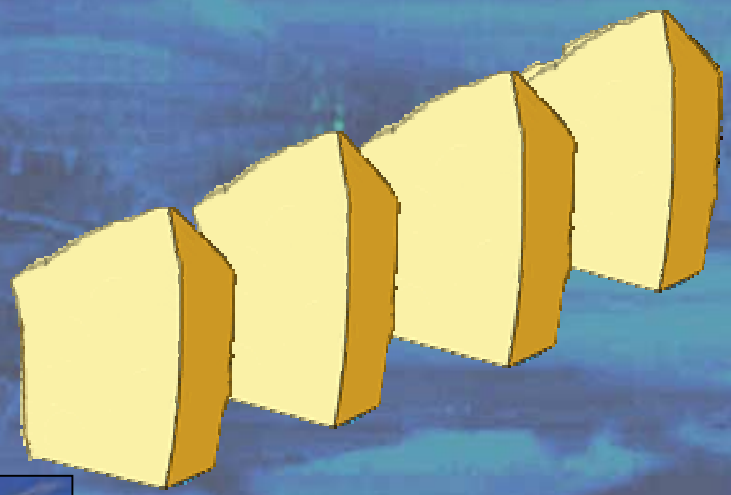
Erosion



Safety Threats

Layered Defences

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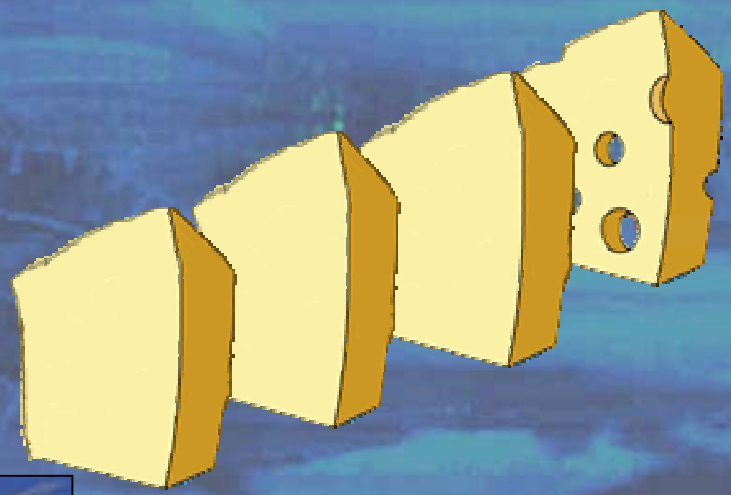
Erosion



Safety Threats

Layered Defences

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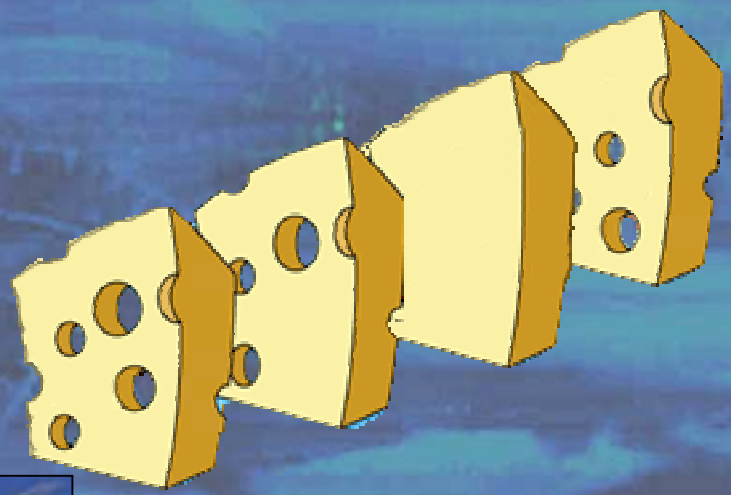
Erosion



Safety Threats

Layered Defences

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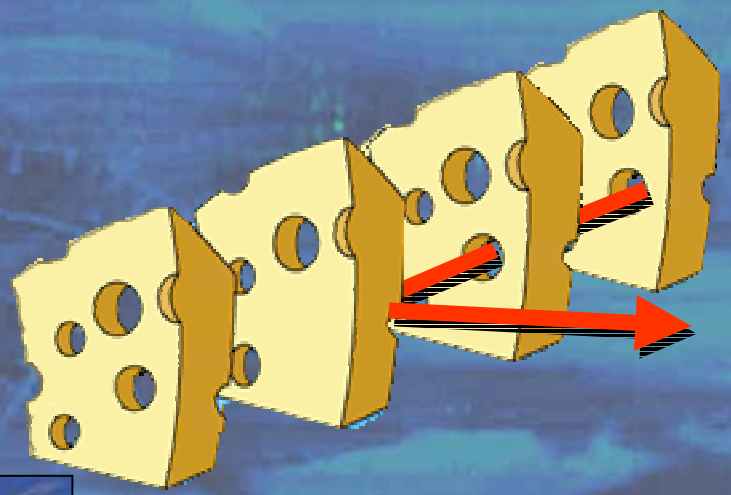
Erosion



Safety Threats

Layered Defences Ineffective

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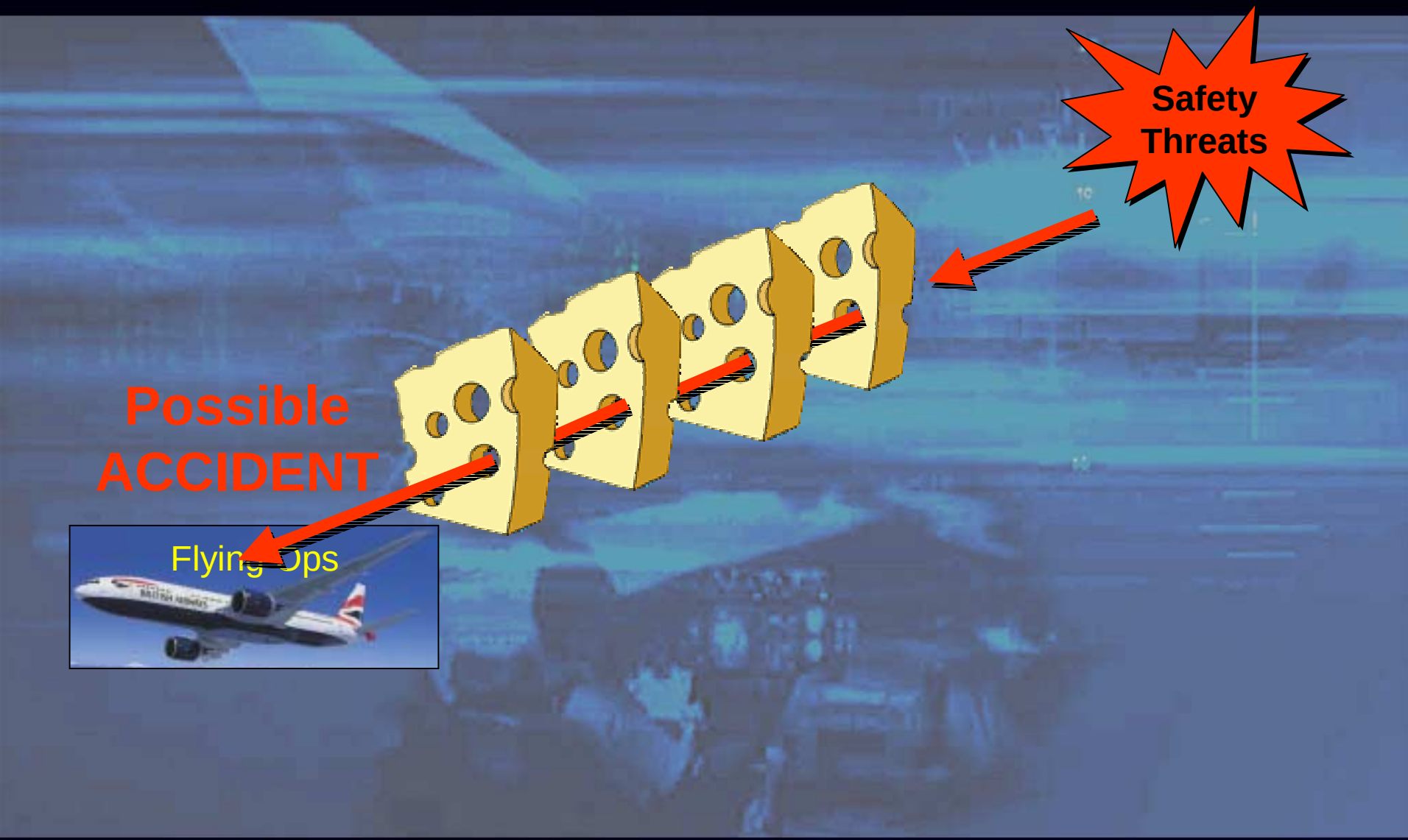

Incident / Event data life cycle

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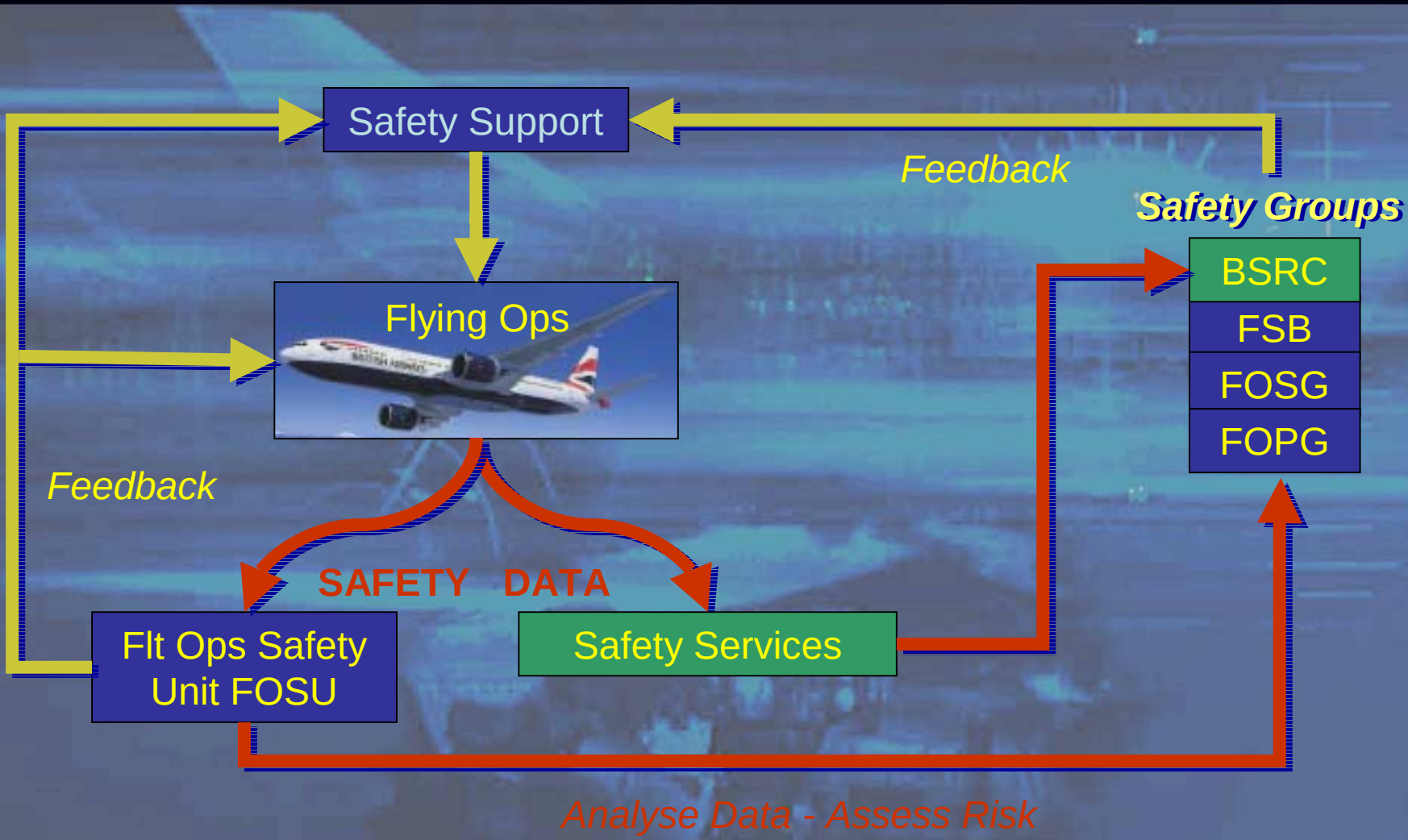

Organisation – Key Ingredients

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Strong Safety Culture

No Blame

Open Reporting

Procedures

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Designed around TEM

Easily Understood

Consistently Applied

Acknowledge what experts do

Training

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Blend of Technical and Human Factors

HF Common Language

Trainer Skills

Operational Rigour

Data

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Air Safety Reports (MOR)

SESMA (FDR Data)

Incident Analysis (CTA)

Risk Assessment (RAT)

Potential Accident Types

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CFIT

Collision – Mid-Air/Ground

Loss of Control - Tech / Non Tech

Runway Excursion

Fire / Smoke/ Fumes

Security

Near miss example

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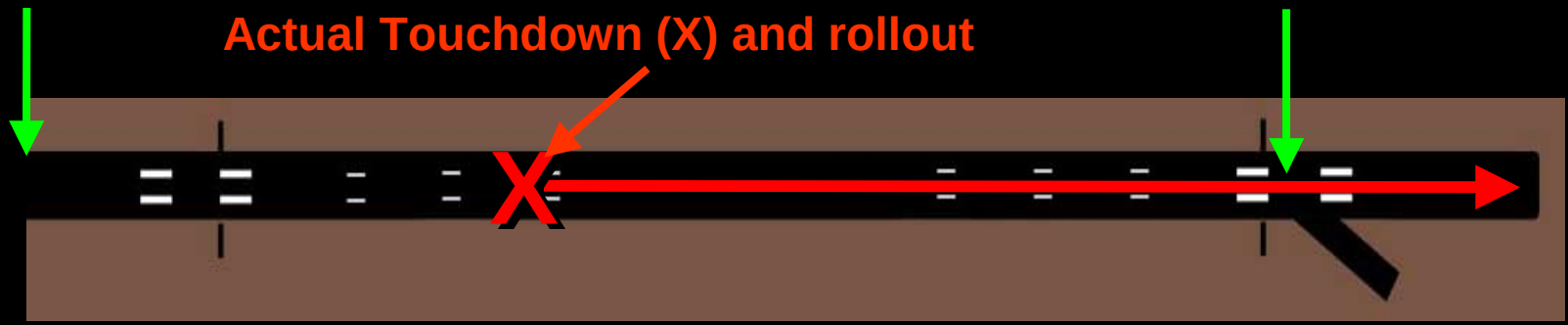
Normal Touchdown zone (X) with planned roll out

35 knots fast

Approx 80 knots passing normal turnoff

Actual Touchdown (X) and rollout



Incident Analysis

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HUMAN FACTORS

Mindset (Training)

Overload (SA)

Tunnel vision (SA)

Confidence (Training)

Incident debrief methodology

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Traditional

- *analytical questioning supported by data (FDR/weather reports/ATC etc)*
- *informs what happened and how*
- *Investigators to establish causal factors*

Cognitive Task Analysis

- *informs individual/crew understanding of SOPs, custom and practice (work-arounds), what happened, how it happened and why the crew did what they did*
- *better informs causal factors and remedies*

CTA Process – 3 Stages

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1. Timeline with Key Events established beforehand

00:00 — 05:00 — 10:00

Timeline will contain relevant phases, decisions, procedures, checklists etc.

Start — Finish

Q? What is the crew understanding of the procedure?

2. Custom and Practice

00:00 — 05:00 — 10:00

Start — Finish

Q? What is custom and practice (e.g commonly seen workarounds/ time saving on the line?)

3. Incident Timeline

Follow up areas

00:00 — 05:00 — 10:00

Start — Finish

What actually happened?

CTA Output

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Use output to:

Review/modify procedures

Review/modify training

Develop expertise

CTA Example – Taxi Incident

Summary: Aircraft attempted to taxi without flap and with personnel under aircraft

NORMAL PROCEDURE	Start Procedure	Push Back Procedure	After Start Check List	Taxi Clearance/Taxi
CUSTOM & PRACTICE	Potential Distractions	Time Pressure?	Lack of Rigour?	Time Pressure?
INCIDENT	System warning	Completed	Not actioned	No Flap & Personnel still under aircraft

CTA Taxi Incident Outcome

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Output from taxi incident CTA used to:

- **Change 2 SOP's based on Crew feedback**
- **SESMA event for taxy no flap**
- **Check Ride feedback item introduced**
- **Develop generic distraction management training module for Sim Checks (all fleets)**

Risk Assessment Tool (RAT)

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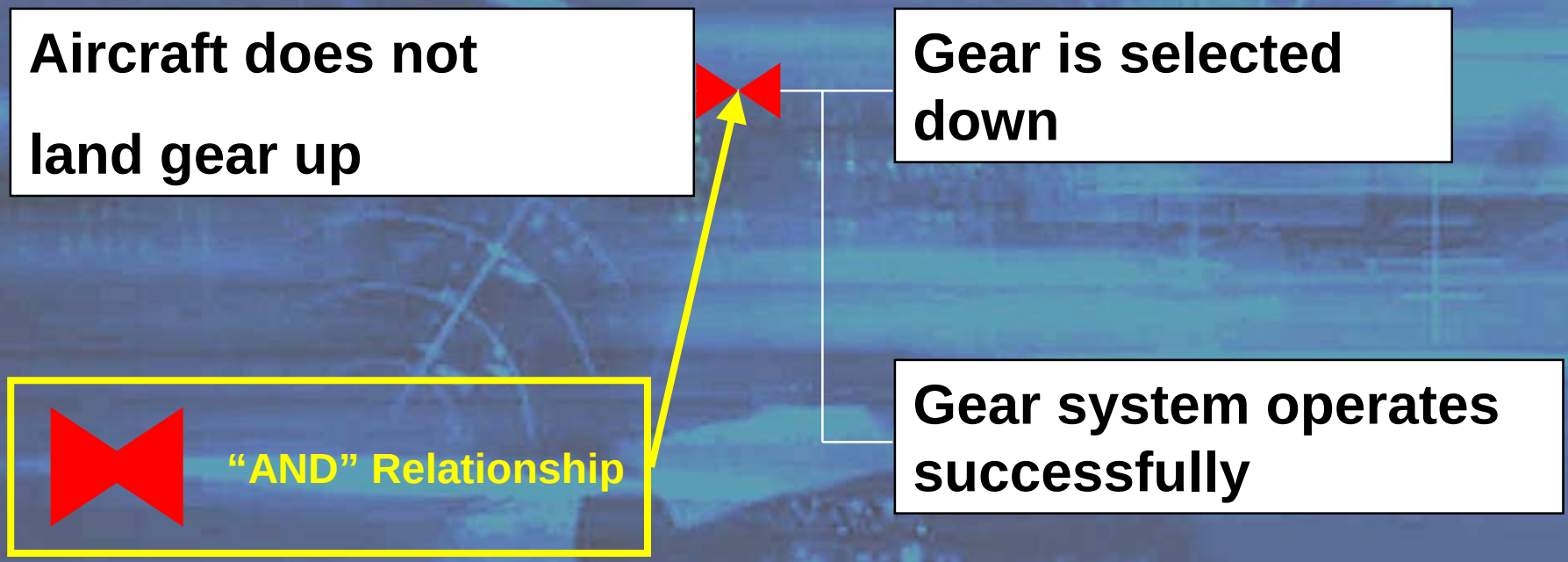
What does it do?

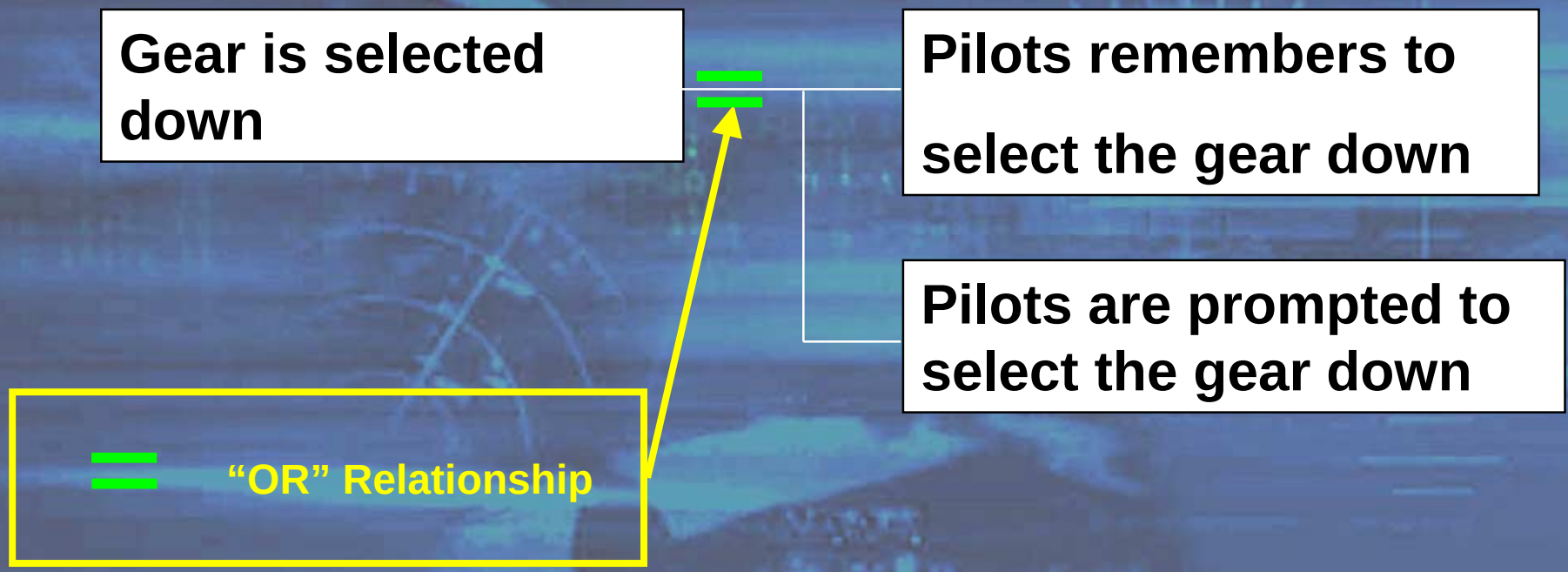
…….and how does it do it?

Example

Risk Assessment Tool (RAT)



Risk Assessment Tool (RAT)



RAT Example

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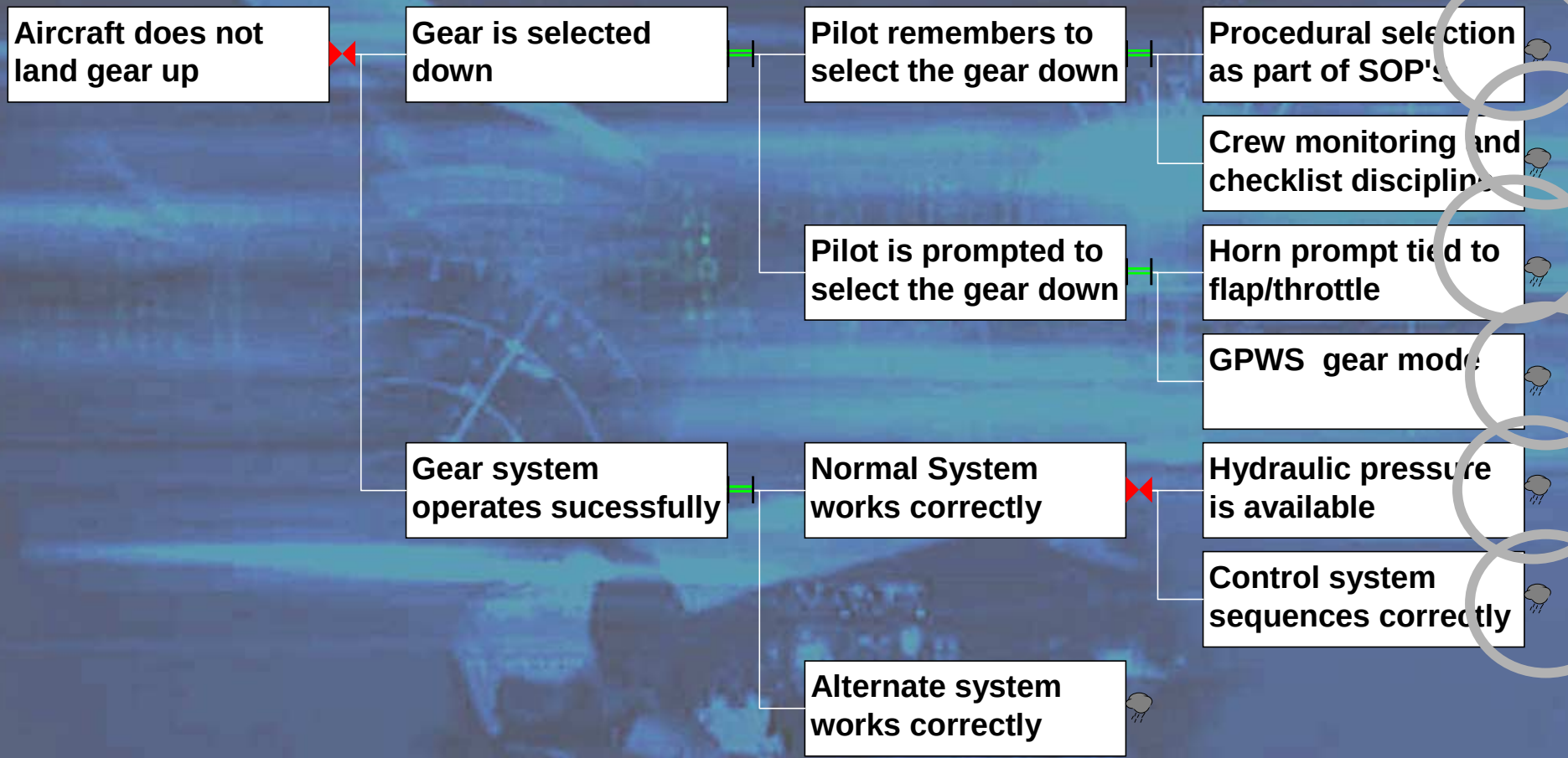

RAT Example Outcome

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In this case, the previous slide shows that the probability of an aircraft landing with the gear up is approximately once in 100 million flights.

Summary

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Risk Management – closing thoughts…….

Tools

- **CTA - Cognitive Task Analysis**
- **RAT – Risk Assessment Tool**

Key points

1. **Thinking of Safety in a different way**
2. **Never relax your effort - you are always cutting the grass!**


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Questions?