



Cargolux Airlines International

***“Around SPIs/SPTs in the
context of monitoring...”***

About Cargolux

Founded in March 1970: over 45 years of experience in all-cargo services

Operating a fleet of 28 Boeing 747-400 / 747-8 (30 in late 2019)

+2,000 employees worldwide
+1,400 employees in Luxembourg

Dual Hub Strategy with Zhengzhou Airport initiated in 2014

→ Europe's #1 all cargo carrier, #5 worldwide

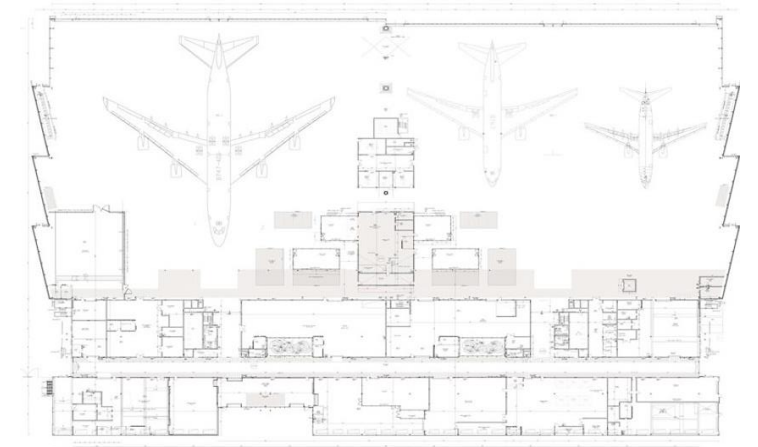


Cargolux Network



Maintenance & Engineering

- 2 hangar bays capable to accommodate: B747-400/8, A380, B777
- Apron for 3 aircraft and taxiway
- Biggest building in Luxembourg
- 480 staff
- +600,000 man hours / year
- +100 A-checks & +13 C-checks performed / year



Management System

- AOC
- ATO
- CAMO / Part M
- Part 145
- Part 147
- DOI



Software Systems / Data Sources

- Safety Reporting / Quality / Compliance Monitoring
- Flight Data Monitoring
- ATQP Database
- Crew Planning Software
- Network Planning Software
- Maintenance Management Software
- Weight and Balance Data
- Flight Planning Data
- DGR Tracking
- Modeled Crew Fatigue
- Weather Database
- Engine / Airplane Health Monitoring
- ACARS
- and more.....





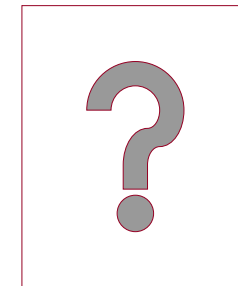
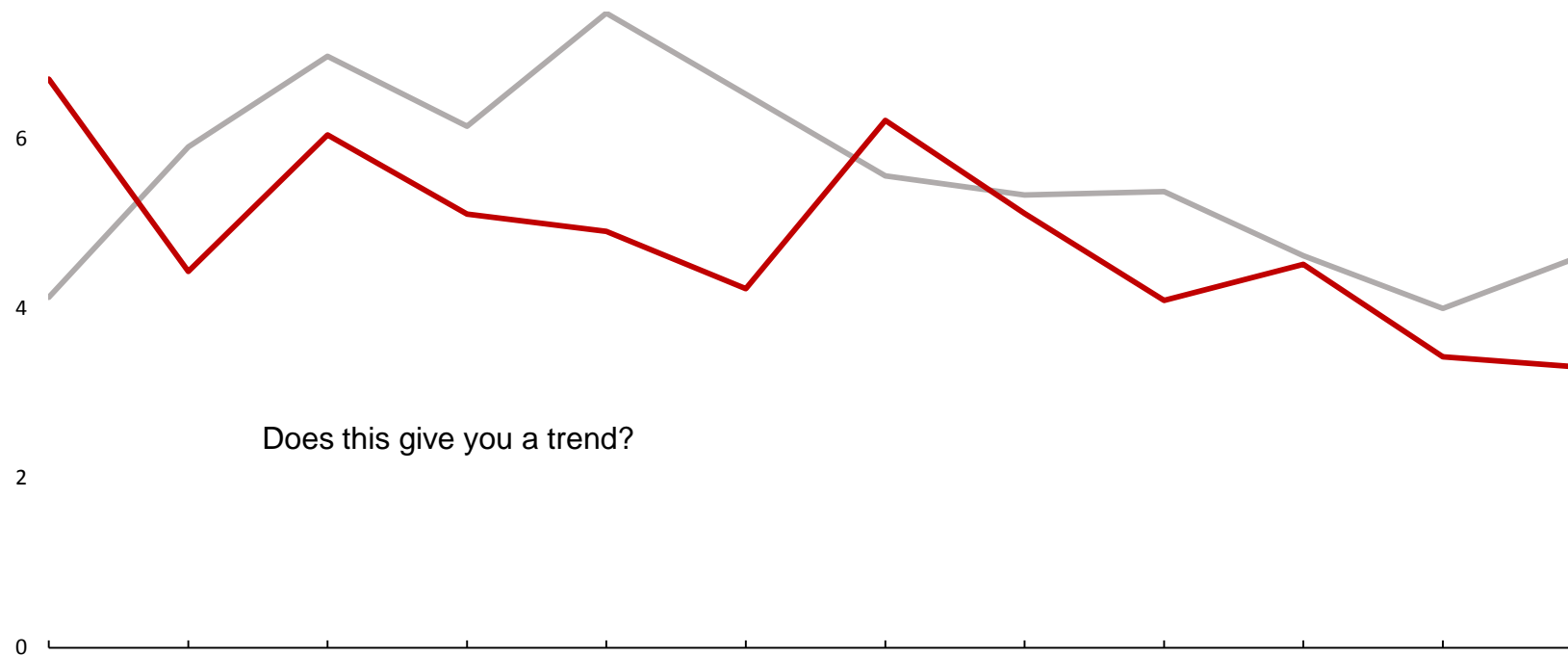
Problems Yesterday Improvements Tomorrow



- Yesterday: Data used for Safety Performance Monitoring was **two** Dimensional due to data silos not talking to each other
- Tomorrow: Data used for Safety Performance Monitoring will become **three / four** dimensional due to data not being anymore in silos

Current SPI Setup

- Operations: Based on Significant Seven
Additional based on Internal Risk Analysis
- Ground: Based on Internal Risk Analysis
- Maintenance: Based on Internal Risk Analysis
- ATO: ?
- DOI: ?
- 147: ?

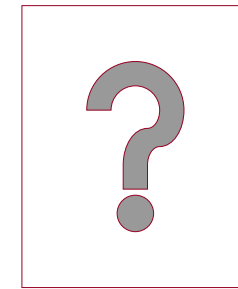
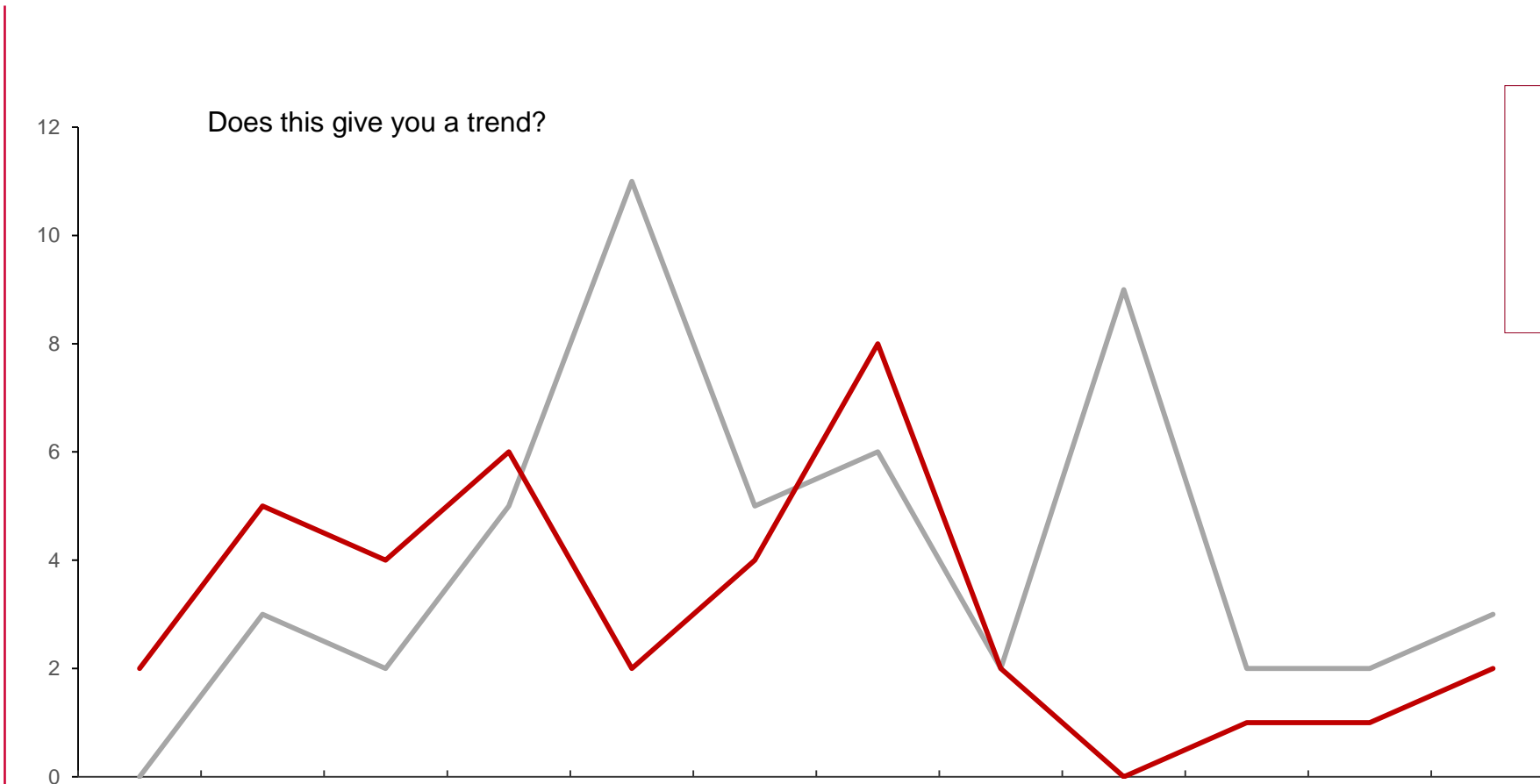
Example Unstabilised Approaches



 01 / 2018 – 12 / 2018
 01 / 2017 – 12 / 2017



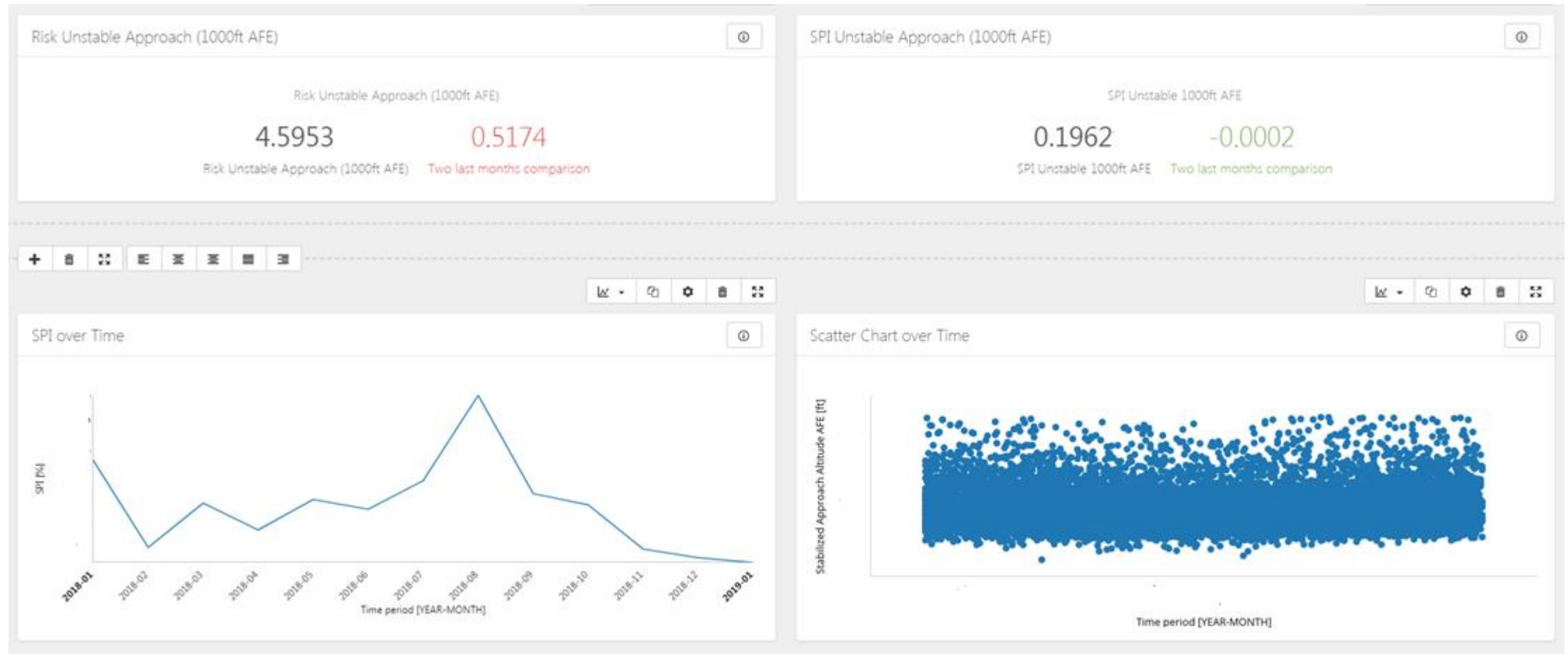
Example of Dangerous Goods Issues



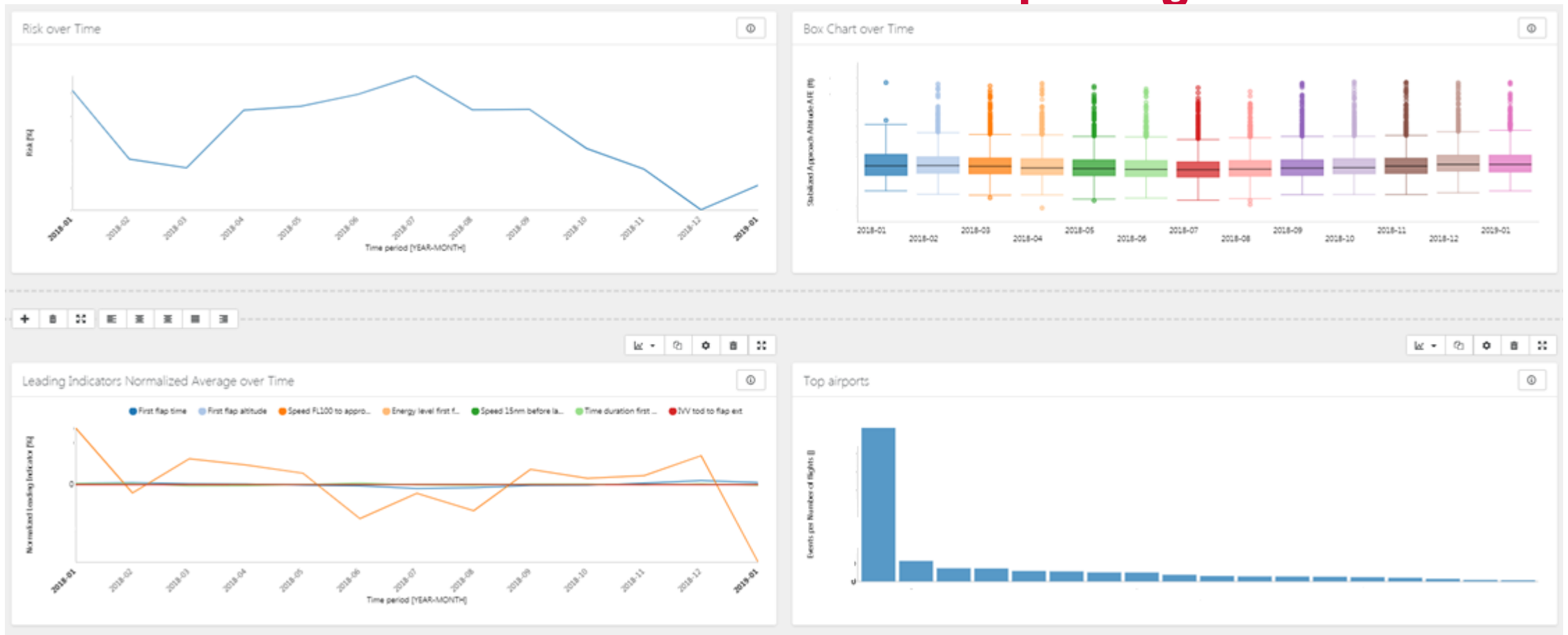
**What makes
these two
example
different?**



New Setup – High Data Point



New Setup – High Data Point





Problems with Low Data Points

- DGR Example:
 - Is the event rate really low or is the reporting rate low?
 - How many close calls where there?
 - Hidden DGR that have not caused an event?
 - Where the close calls reported as proactive report?
 - When reporting rate is in the area of 0.1% can you speak of a trend when it moves to 0.2%?
 - Would you be able to get supporting data using surveys?
 - How long does it take to educate people and give them trust to report better?
 -
 -



Challenges setting Warning / Target values

- What rate of event is acceptable / what rate of event is unacceptable?
 - Lack of benchmark capability
 - No guidance/help from Regulators / EASA / Industry
 - Very low number of data points (Qualitative versus Quantitative decisions)
 - Risk Appetite of the organization
- Using bigger data
 - Normal Distribution Helps
 - Monitoring / Using Leading Indicators
 - Possibility of Regression Analysis



Summary

- Multiple standalone data sources are a challenge
- Some data sources with high amount of data points
- Some data sources with low amount of data points
- Events based SPIs limited in value but sometimes only source
- Normal Operation gives usually more information than Event Information

Thank you!

