

# DFS Safety Management System 2.0

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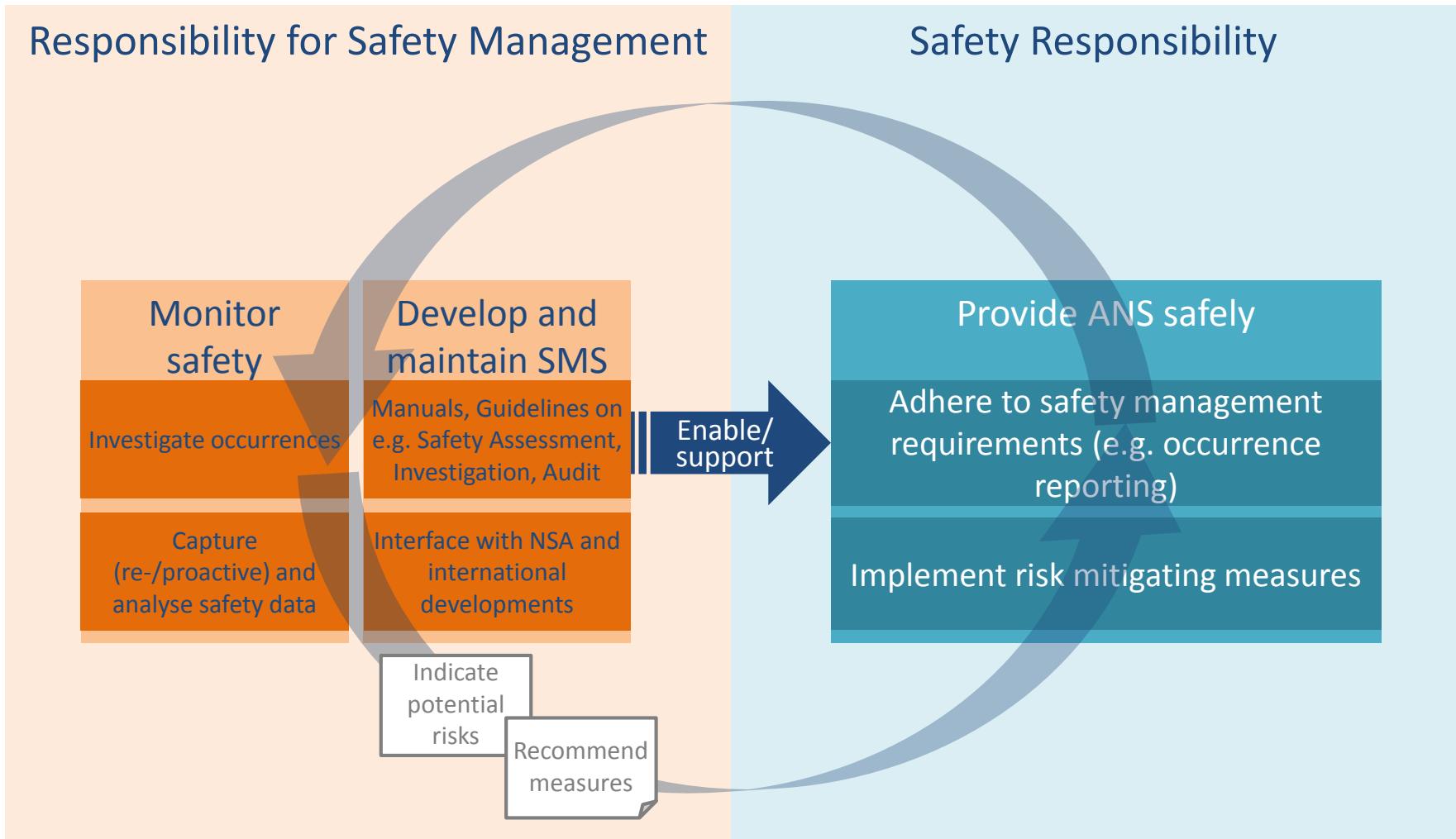
**DFS** Deutsche Flugsicherung

# Safety in ATM

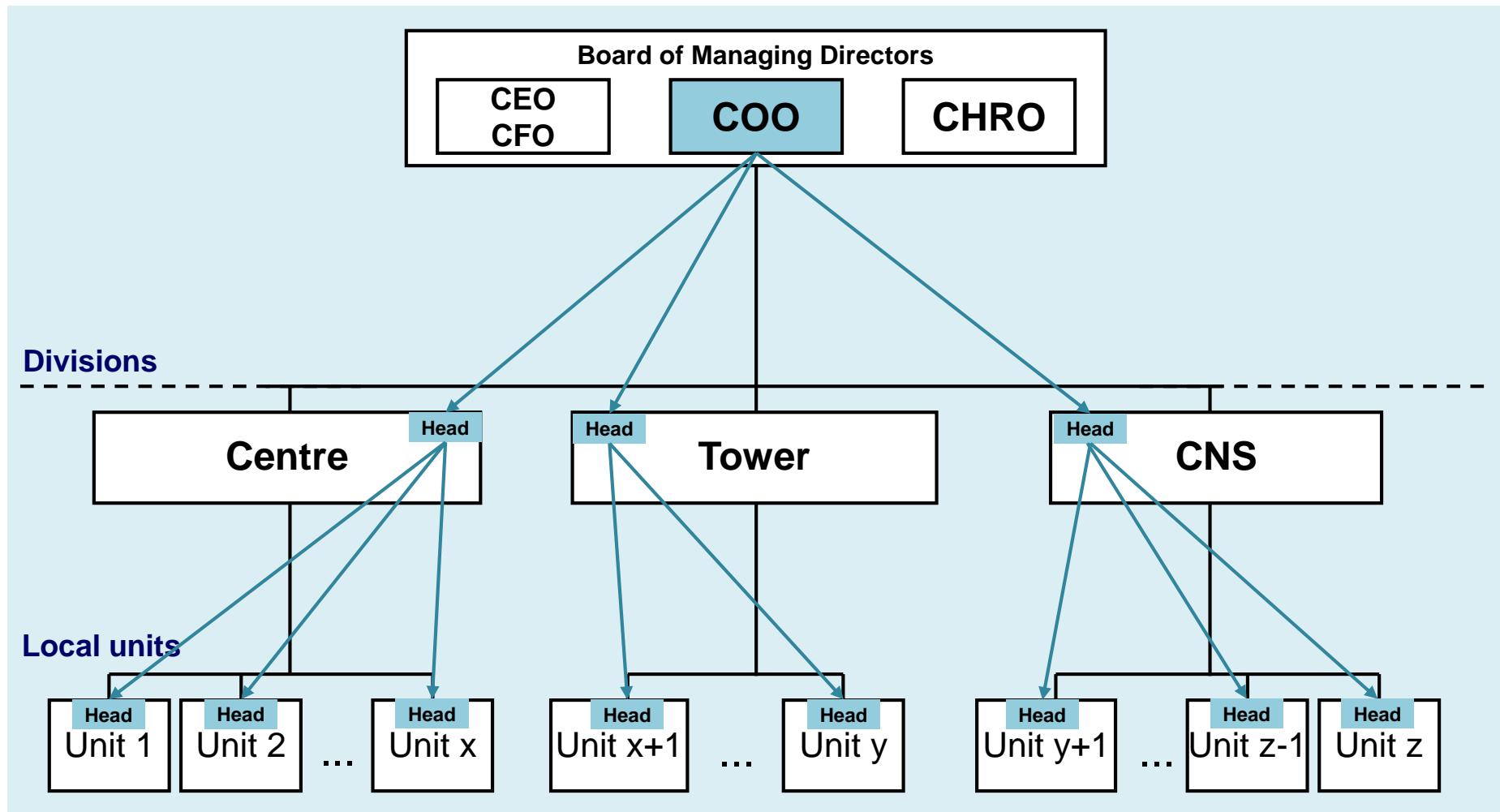
- Our **system is robust** and our achievements in safety can be very well recognized and acknowledged
- We have achieved a lot, but **we should not be complacent**
- **New regulations and novel technologies** and related changes (e.g. increased automation) will **challenge** our system
- **Safety is and will remain our top priority in everything we will do**

⇒ **How can we rise to the new challenges?**

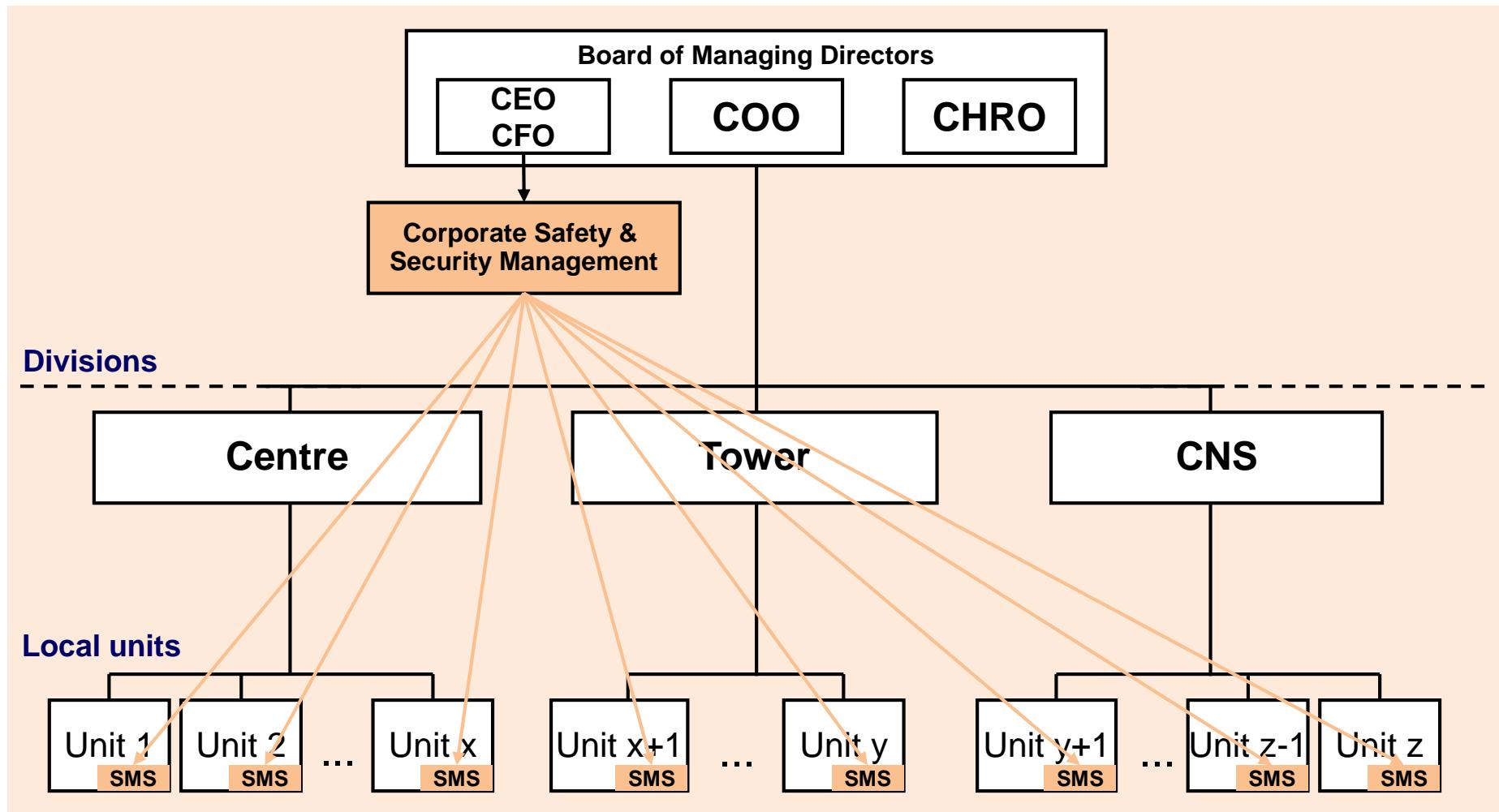
# SMS – Roles and responsibilities



# DFS line of responsibility for operational safety



# DFS Safety & Security Management



# Traditional Safety Management Approach 1/2

- The safety management system **focus is mainly based on incidents & accidents** (lagging indicators)
- The orientation is therefore **reactive and based on hindsight**
- **Use of after-the-event data** to achieve an understanding about the organisation's safety level and to initiate mitigation measures

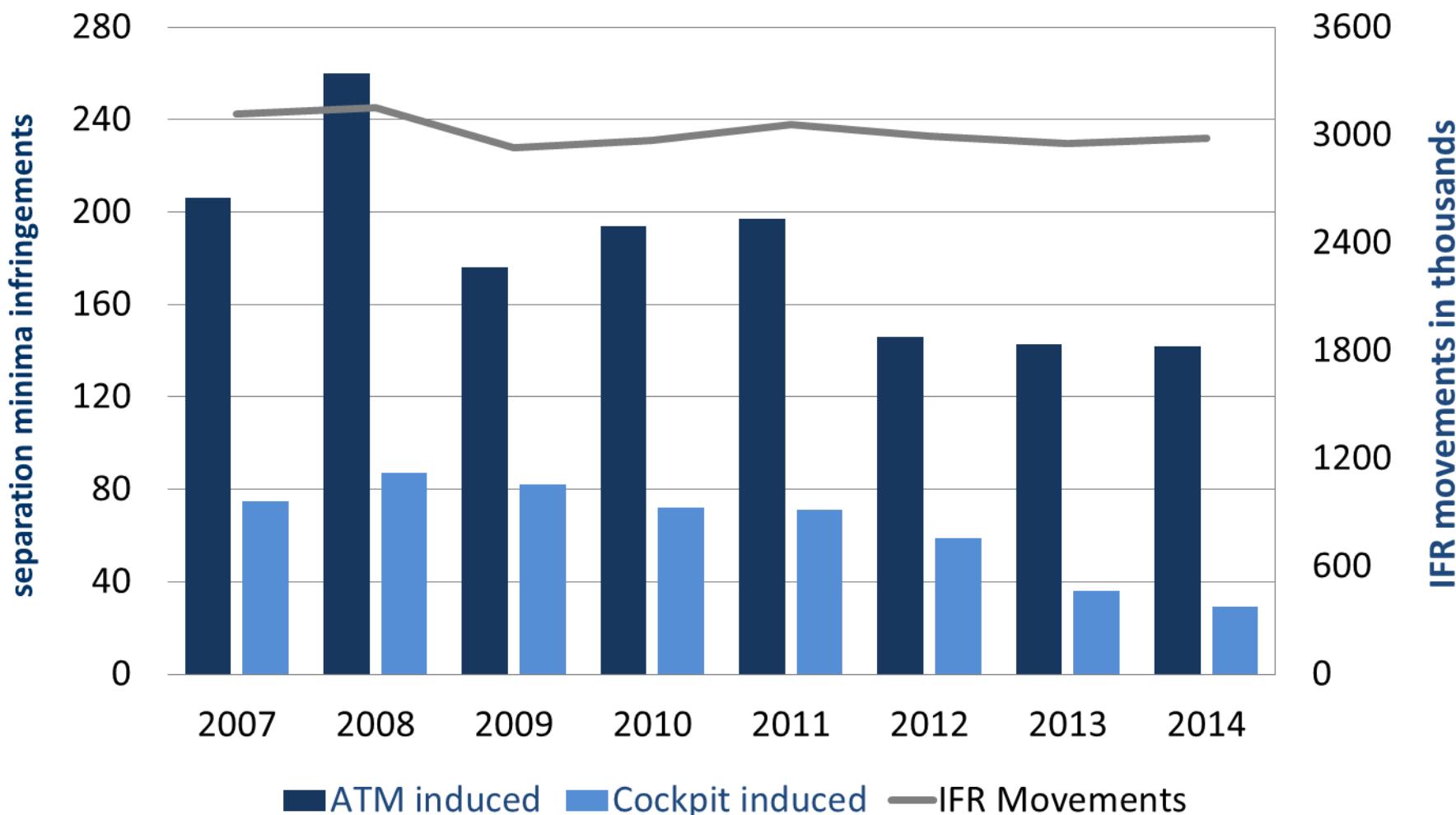
# Traditional Safety Management Approach 2/2

- Measuring safety is done by **counting the numbers of adverse events**
- Consequently, **safety is measured by its absence instead of its presence**
- Organizations with this understanding may learn from past events, but **hardly proactively anticipate future threats**

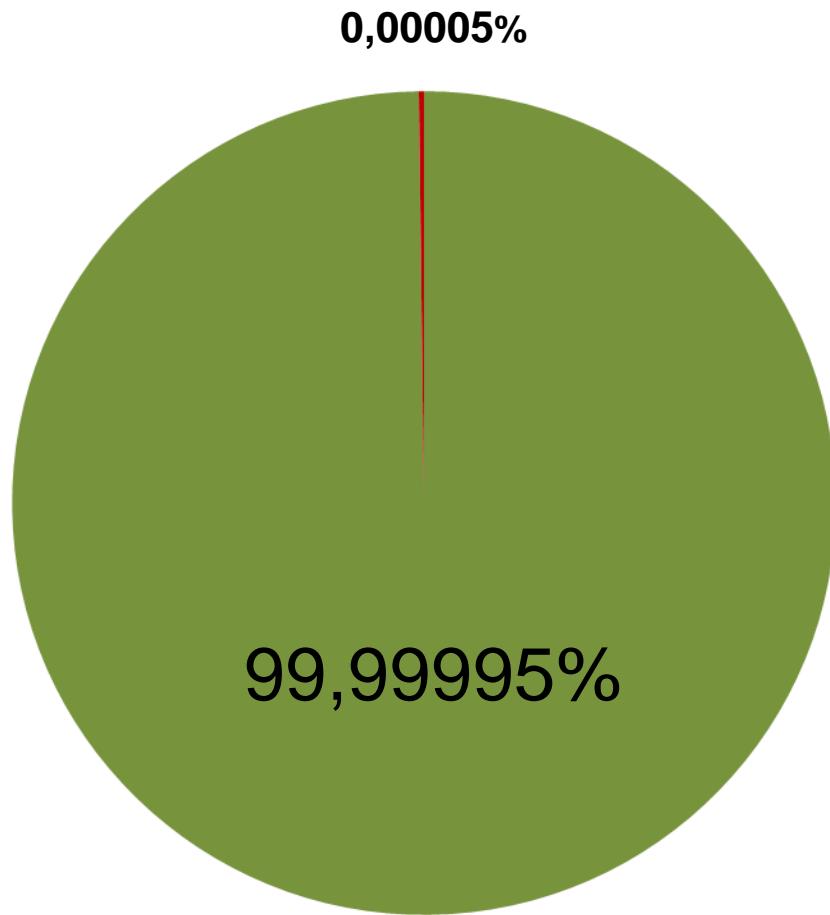
# Safety Management achieved a high level of Safety

- Complex aviation organizations like ANSPs are called “ultra safe systems”, where **major accidents are relatively rare**
- Constant improvements have led to very high level of safety. **The number of adverse events is almost zero**
- There might be a chance of **complacency**, caution should be exercised

# DFS development of Separation Minima Infringements



# Distribution of “failure” and “success”



## DFS 2014 figures:

**142** ATM induced SMI vs.  
**2.980.735** IFR movements

$$\frac{142}{2980735} = 0,0000476$$

# Is it sufficient to seek for negative outcomes?

- However, to keep these figures so low, **continuous enhancement of our Safety Management System with a proactive view** is required
- The systems safety status shall be continuously monitored to detect early on developments jeopardizing the continued high level of safety

# What does a modern safety management system need? The DFS point of view

Elements, which should be regarded for a proactive safety management approach :

- Consider **Weak Signals** in ATM safety performance
- Perform **Local Safety Surveys**
- Establish **user centered** design
- Identify **automation** as joint cognitive systems

# Conclusion

- The **current safety level** in ATM is **very high**
- The traditional approach in Safety Management Systems (SMS) has to be improved in order to **continue to strive and deliver the highest standards in safety**
- While the collection and analysis of occurrences (SMS 1.0) should be maintained, **more effort is required in order to systematically monitor and better understand our system** and what makes us successful and early identify "creeping developments" (**Safety 2.0**)
- The **DFS approach to "Safety 2.0"** contains various **proactive programmes** like "Weak Signals", "Local Safety Surveys" and the establishment of a "Design Process Guide"
- We **welcome EUROCONTROL's outstanding cooperation and support** in several initiatives and programmes

# Thank you.

