CYBER CRIME IN AVIATION

ANDREAS SCHWEIZER

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CYBER CRIME IN AVIATION

Speaker

Andreas Schweizer
CEO & Partner
ICT Professional since more than 20 years

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Schulhausstrasse 6
3672 Oberdiessbach

Tel. +41 31 770 00 70

a.schweizer@diverto.ch

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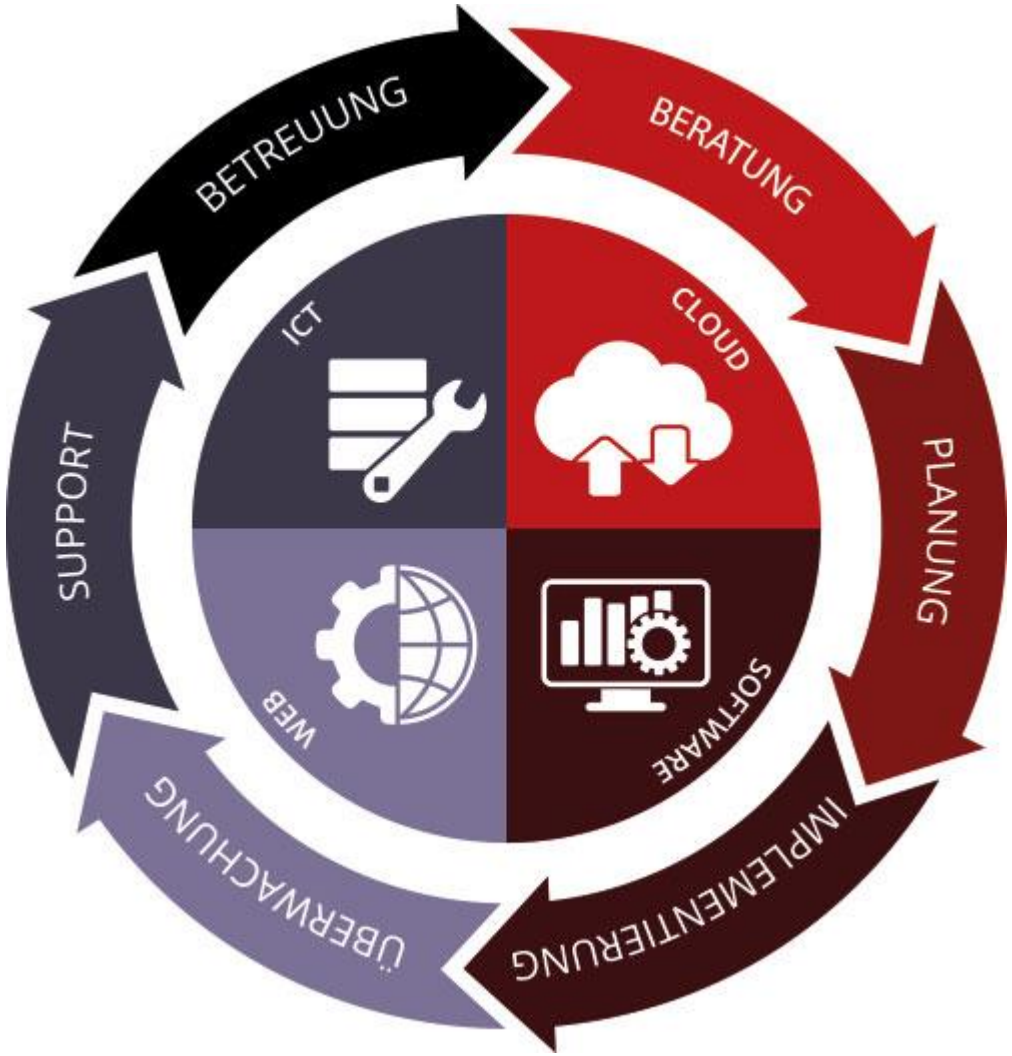
Competences



- SMB Market in german part of switzerland
- 12 employees
- Q.C.M. ICT Partner since over 2 years

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CYBER CRIME IN AVIATION

Agenda

1	Agenda
2	Facts about cyber crime
3	Who is at risk?
4	How do breaches occur?
5	How we Protect?
6	What about aviation?
7	Conclusion

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CYBER CRIME IN AVIATION

- Where‘s the difference to ICT Security?
- What else is there to consider?

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WHY?

THE GRAVITY OF CYBERSECURITY

"America must also face the rapidly growing threat from cyber-attacks…our enemies are also seeking the ability to sabotage our power grid, our financial institutions and our air traffic control systems.
We cannot look back years from now and wonder why we did nothing in the face of real threats to our security and our economy."

President Obama, 2013 State of the Union Address

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TECHNOLOGY & INNOVATION

- In just two decades, new technologies and the Internet transformed society and businesses alike
- We had little time to learn or adopt – as individuals, society or industry
- We have to adopt to permanent change and high dynamics

1 Million Years

50 Years

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TARGET-RICH ENVIRONMENT

- Increase in computing performance
- Price erosion
- Communication between people, machines an devices
- Growth of mobile technologies
- Explosion of social media
- BYOD
- Big Data
- Internet of Thing

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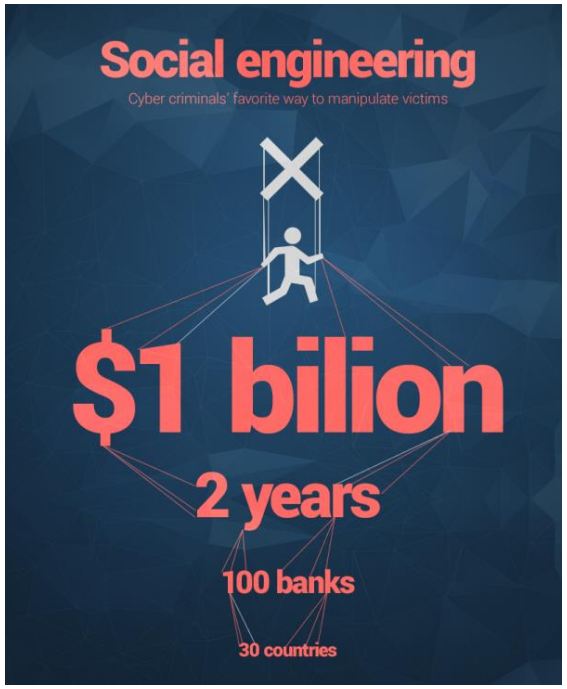
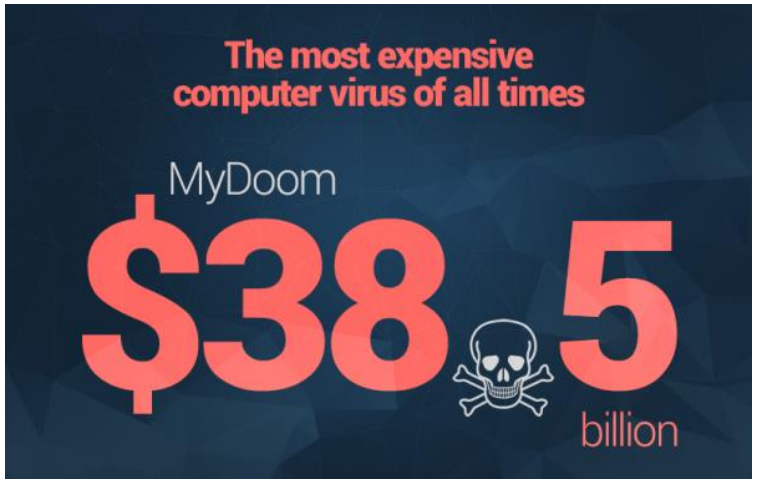
CYBER CRIME FACTS





- Miami Airport: 20‘000 hack attemps per day
- Amount of damage p/y in switzerland: 370 million

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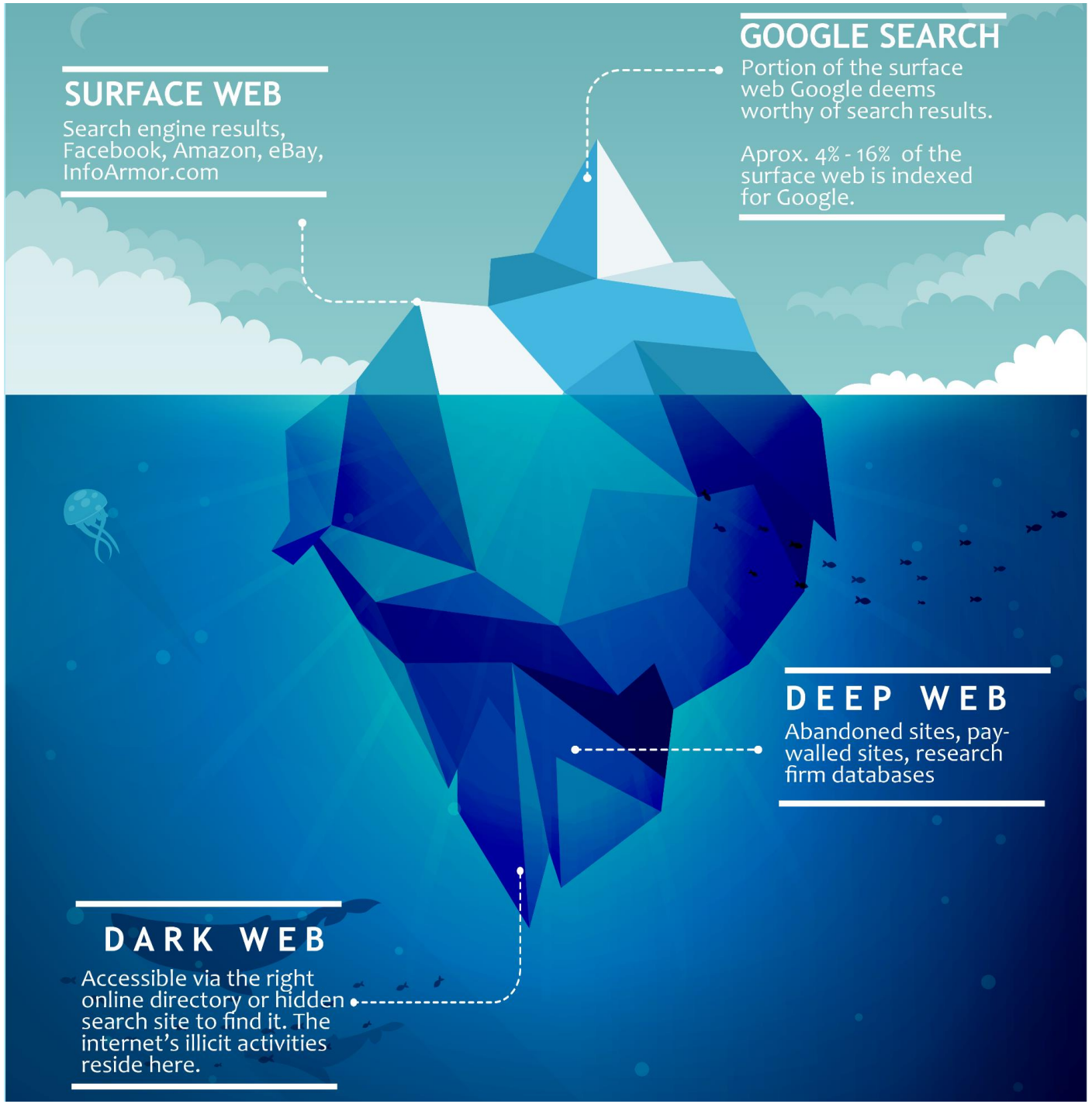

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WHO IS AT RISK?

- Data Subjects, Data Controllers and Data Processors
- Risk is NOT Industry Specific
  - Financial Institutions
  - Merchants
  - Healthcare
  - Critical Infrastructure Providers (marine)
  - Governmental Entities
  - Sole Proprietorship and Individuals
- 40% of breaches in companies under 1000 employees
- 31% of breaches in companies with under 100 employees

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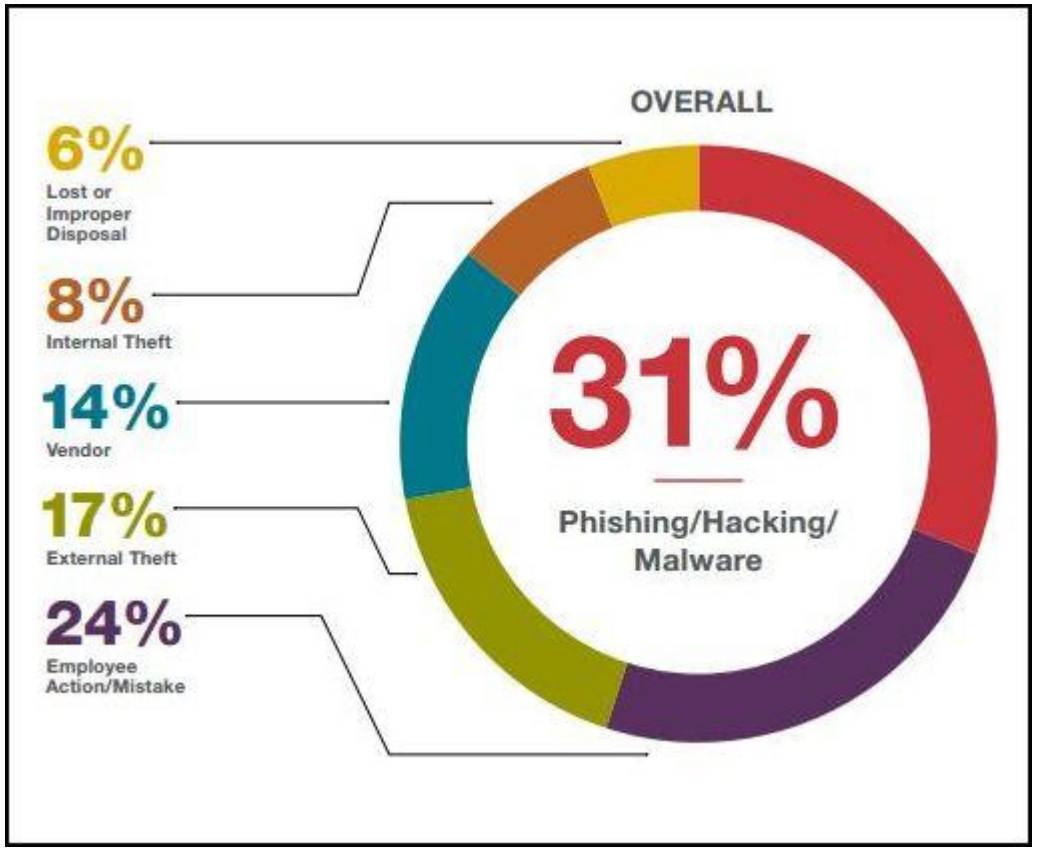
HOW DO BREACHES OCCUR?

- Malware injection
- Phishing campaigns
- Social engineering
- Mobile Malware
- Physical theft of hardware



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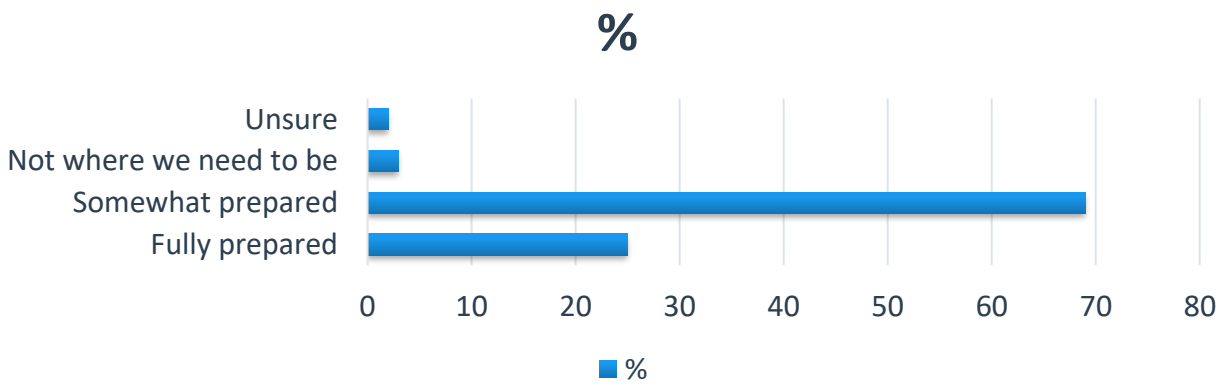
HOW PREPARED WE ARE?



- Are we prepared? 72 percent of CEOs say they are not fully prepared for a cyber event, significantly higher than in 2015 (50 percent).
- Can you be fully prepared? In interviews, CEOs frequently said: “We are as prepared as we can be” or “You can never be fully prepared.”
- How to prepare? By practicing the ability to respond to cyber events. Companies need an ability to be agile and deal with the unexpected.

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PROTECTION TECHNIQUES

- Update Software
- Backup your data
- Run AntiVirus Software (Anti Ransomware)
- Run Firewalls (NextGen)
- Strong Passwords (Change frequently / Different Passwords)
- Access Control: various levels on system & network (2-Factor)
- Control Mobile Devices
- User-Training

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TODAY

attackers can afford functionality and tools that were beyond their reach a decade ago!

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AND WHAT ABOUT AVIATION?

- Systems are not designed for security
- Software complexity is increasing
- There is no secure software
- Communication is not encrypted
- Wifi on board, entertainment system -> additional attack areas
- Staff has no experience

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AVIATION SYSTEM ARE NOT PREPARED

Internet Computer

- Networked and continously hardened in battle!
- Designed to withstand external threats !
- Exploit mitigation, antivirus, frequent security updates

Aviation Computer

- For decades systems ran isolated!
- Designed for high availability, not security!
- Old code, no protection, no/few security updates!

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SOFTWARE COMPLEXITY

FACTS

- Software complexity is increasing
- There is no secure software

Thus, we need to

- handle vulnerabilities!
- deploy software updates efficiently!
- systematically test the security of critical systems

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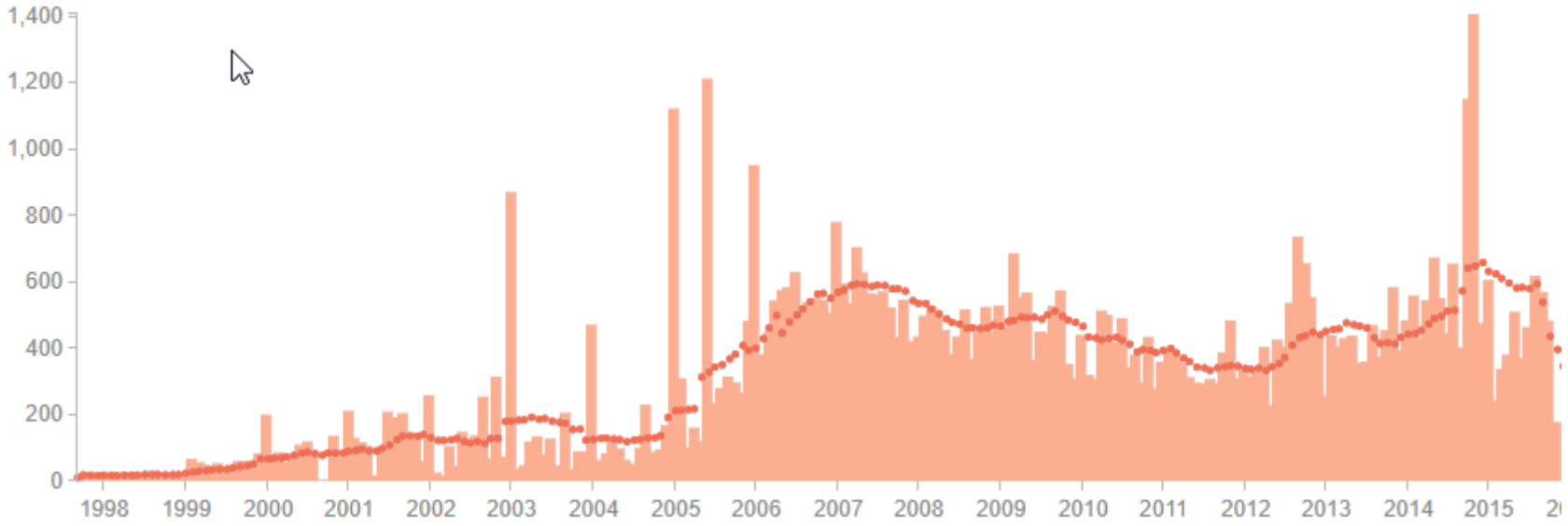
THERE IS NO SECURE CODE

- In spite of increased investment, the software industry at large is still unable to produce secure code



Security Vulnerabilities published per month

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CONCLUSION

- Decision and policy making processes in aviation are outpaced by the dynamics of the cyber domain (we are now in the 21st century)?
- There are valuable lessons from other industries!
- Cyber security issues are a safety issue

“Ignoring reality is not an effective way to get healthier, or smarter, or safer, even though it might temporarily make you feel better”

Bruce Schneier

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QUESTIONS & ANSWERS

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