



RDW

# Software Security

WP29 / ITS

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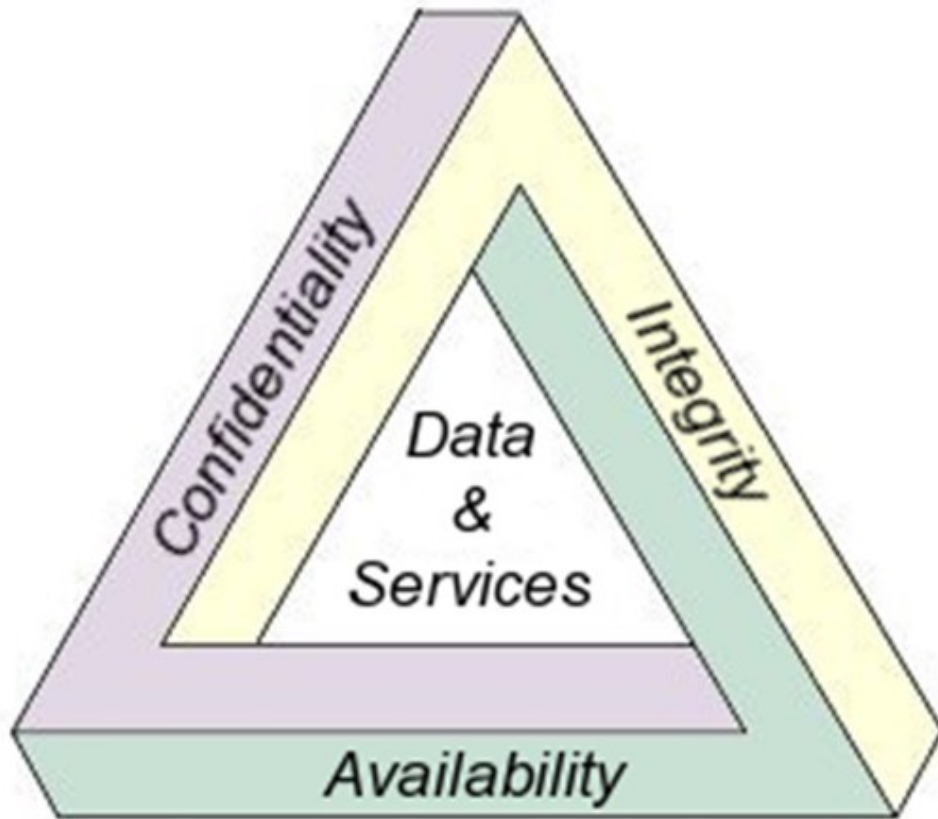
# Dangerous?



- Kristina Svechinskaya, creator Zeusbot, stolen 35 million euro



# Definition Security



Security = certain level of

- confidentiality
- integrity
- availability



# Approval system principles



- E.g. ISO 26262 is used by manufacturers for software development
- Software Security is not yet included in testing/certification for type approval



# Impact software security

- Security affects safety, environment and functionality
- Proper security serves Liability and Privacy





# Security threat increases

- More internet connected cars (and infra)
- More wireless
- More networks within vehicle
- More connection with Nomadic Devices
- Better tools for breaking codes
- Faster communication of hacking methods
- **THERE IS AN INCREASING BUSINESS CASE**



# Aspects for security

- Architecture (hardware & software)
- Security level components (chips e.a)
- Software Process (SDLC)
- Software Updates (OTA? While driving?))
- Memory capacity hardware
- Response time
- Quality level components and data
- Configuration management of parameters





# Proposal to proceed

- Decide that software security should be part of Type Approval requirements
- Develop a separate (modular) Regulation for Software security
- Determine Security requirements, preferably based on existing standards
- Define a flexible process to support future developments/requirements





# Considerations

- Find the right balance



Function	Assurance level	Examples
Safety	High	ASIL C/D, EAL 6/5
Environment	Medium	ASIL A/B, EAL 4/3
Information (ie. Infotainment)	No requirement	-

- If software combines functions, the highest level should be realized



# Considerations (2)

- Importance of data analysis (surveillance) will increase as part of approval
- How about “self-learning software”



# Considerations (3)

SAE Level	Assurance levels for safety functions and components that could impact safety functions	Assurance levels for environmental functions
0-2	ASIL C/D, EAL 4/3	EAL 4/3
3-5	ASIL C/D, EAL 5/6	EAL 4/3

- Note: EAL Assurance levels could also depend on how “connected” a vehicle is
- Security should be considered for the complete system (vehicle & infra)



Those who surrender freedom for  
security will not have, nor do they  
deserve, either one  
(Benjamin Franklin, 1706-1790)

Thank you for your attention  
Peter Striekwold

