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# PAS 11281 – UPDATE
# IFIP WG 10.4 RESEARCH REPORT

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PT/1390/138019/

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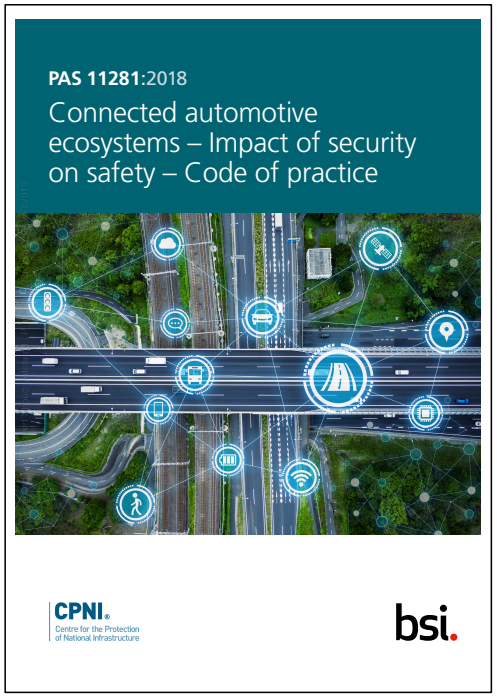
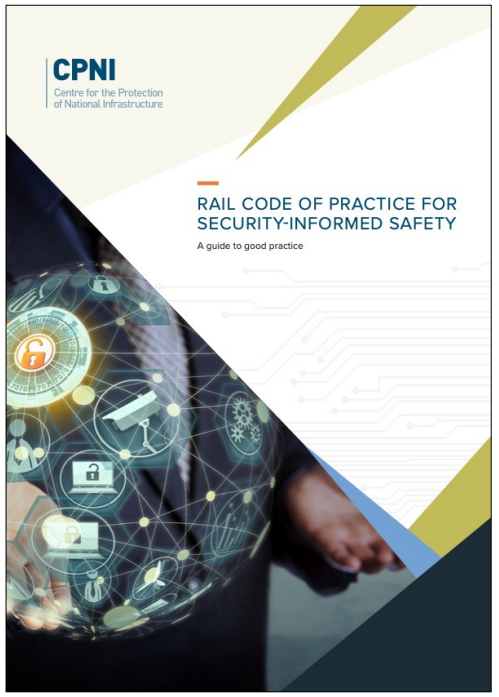
# BACKGROUND

# TWO CODES OF PRACTICE – AUTOMOTIVE AND RAIL



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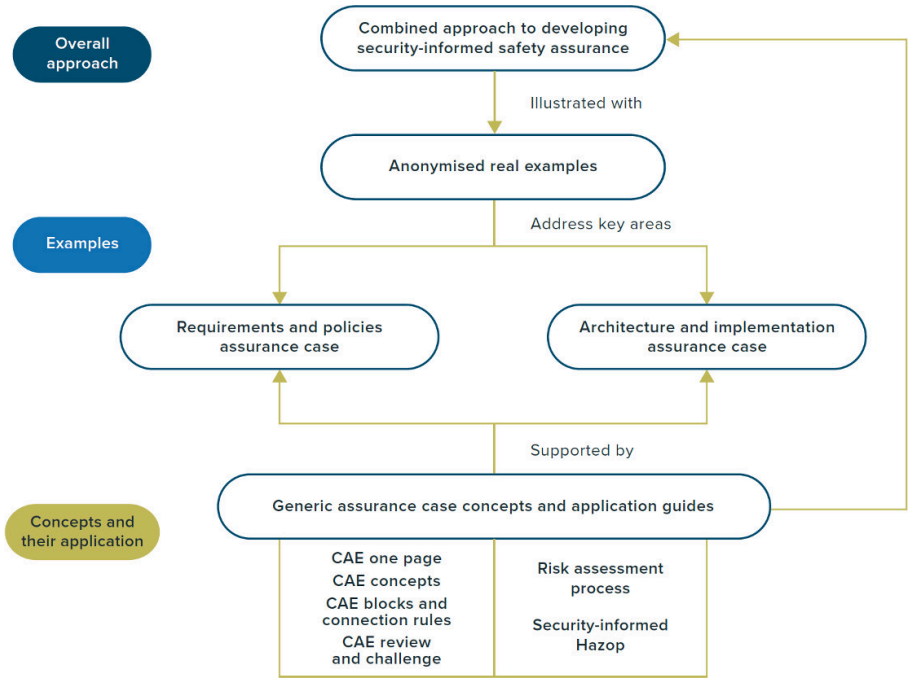
# GUIDANCE ON SECURITY-INFORMED SAFETY ASSURANCE




https://www.npsa.gov.uk/security-informed-safety



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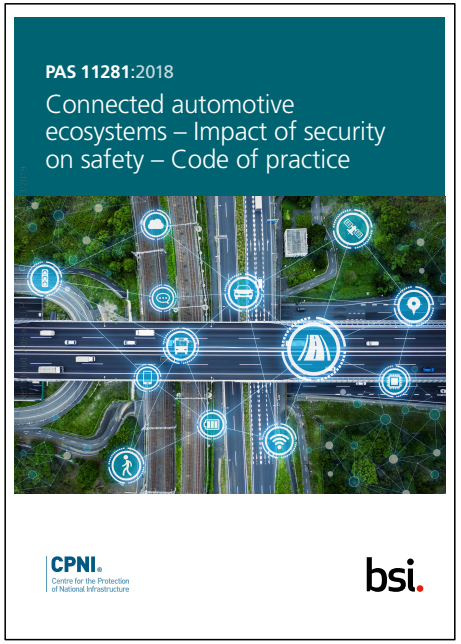
# OVERVIEW OF PAS 11281

# PAS 11281

- PAS 11281 is a code of practice on security-informed safety for the connected automotive ecosystem
- The focus is on requirements rather than mechanisms
- Covers the entire connected automotive ecosystem, not just vehicles
- The aim is to be concise but useful
- References are provided to existing standards for further guidance

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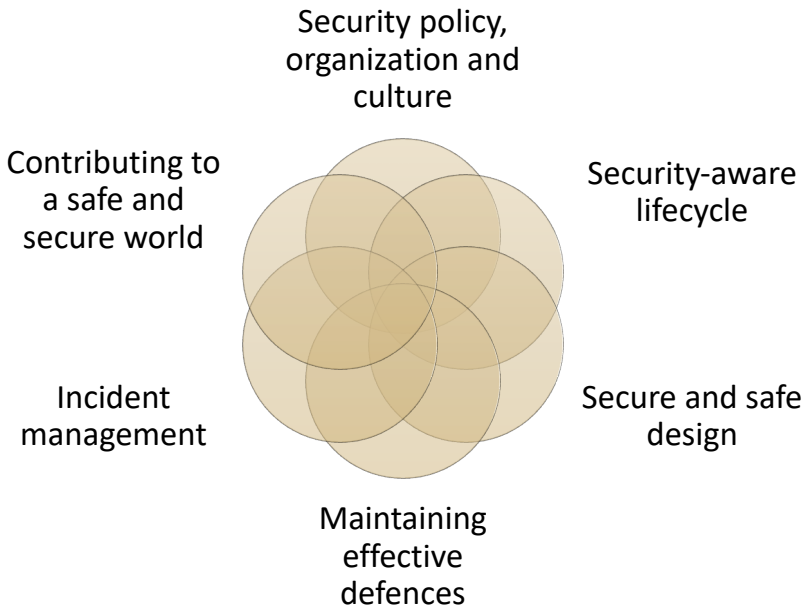
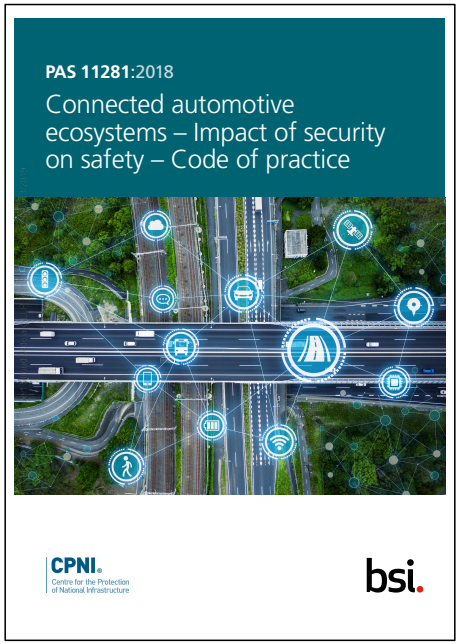
# BSI PAS 11281

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## INFORMATIVE ANNEXES

- Annex A – Risk assessment
- Annex B – Assurance and safety cases
- Annex C – Secure versus safe coding practices
- Annex D – Approaching safety and security integration
- Annex E – Automotive networks
- Annex F – Security and safety of a composite system
- Annex G – UK Government CAV cyber security principles

## TARGET AUDIENCE

- Automotive manufacturers
  - OEMs, Tier 1, Tier 2, Supply chain
- Government
  - Vehicle Certification Agency (VCA)
  - DfT
- After-market
  - Independent service organizations
  - Non-OEM part suppliers
- Broader ecosystem
  - Highways England
  - Local authorities
  - Vehicle teleservice providers

# RELATIONSHIP TO ISO/SAE 21434 AND UN REGULATION NO. 155

## TIMELINE

- Jan 2016 – SAE J3061 Cybersecurity Guidebook for Cyber-Physical Vehicle Systems
- Oct 2016 – NHTSA, Cybersecurity best practices for modern vehicles
- Dec 2016 – ENISA, Cyber security and resilience of smart cars – good practice
- Aug 2017 – DfT, Principles of cyber security for connected and automated vehicles
- **Dec 2018 – Publication of BSI PAS 11281**
- Feb 2020 – ISO/SAE DIS 21434 – Road vehicles – Cybersecurity engineering (DRAFT)
- Jun 2020 – UN regulations on Cybersecurity and Software Updates adopted by WP.29
- Jan 2021 – UN regulations enter into force
- Aug 2021 – ISO/SAE 21434 – Road vehicles – Cybersecurity engineering
- July 2022 – UN regulations mandatory for all new vehicle types in EU
- July 2024 – UN regulations mandatory for all new vehicles in EU

## COMPARISON OF ISO/SAE 21434 AND PAS 11281

| | ISO/SAE 21434 | PAS 11281 |
|---|---|---|
| Scope | Road Vehicles | Connected Automotive Ecosystem |
| Threats | Safety, Financial, Operational, Privacy | Safety |
| Guidance | General advice on risk management | Specific advice on security controls |
| Common topics | Overall cybersecurity management<br>Continuous cybersecurity activities | Security policy, organization and culture<br>Incident response |
| Overlapping topics | Concept phase<br>Product development phase<br>Post-development phase | Security-aware development cycle |
| Different topics | Project-dependent cybersecurity activities<br>Risk assessment methods<br>Cybersecurity validation<br>Distributed cybersecurity activities | Secure and safe design<br>Maintaining effective defences<br>Contributing to a safe and secure world |



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## ROLE OF PAS 11281

- The UN automotive cyber security regulation requires manufacturers to consider a broad range of cyber security threats to their vehicles
- ISO/SAE 21434 defines a general framework for risk management that could form the basis for a cyber security management system but provides no guidance on specific controls and mitigations
- PAS 11281 complements ISO/SAE 21434 and supports the UN regulation by providing concrete advice on building systems that safe and secure by design and maintaining safety and security during operations
- PAS 11281 also addresses concerns about the safety and security of the connected automotive ecosystem, which is beyond the scope of ISO/SAE 21434 but needs to be considered in order to satisfy the requirements of the UN regulation

## UN REGULATION 155 – PROPOSED INTERPRETATION DOCUMENT

- **Paragraph 7.2.2.2., part (c)**
  The processes used for the assessment, categorization and treatment of the risks identified
  - "BSI PAS 11281:2018 may be applicable for the consideration of safety and security"
- **Paragraph 7.2.2.2., part (e)**
  The processes used for testing the cyber security of a vehicle type
  - "BSI PAS 11281:2018 may be utilised for considering the interaction of safety and security and processes for evidencing security outcomes are met"
- **Paragraph 7.3.4.**
  The vehicle manufacturer shall protect the vehicle type against risks identified in the vehicle manufacturer's risk assessment
  - "BSI PAS 11281:2018 and other standards regarding claims, arguments and evidence may be used to justify the design decisions of the manufacturer"

**ECE/TRANS/WP.29/2021/59**



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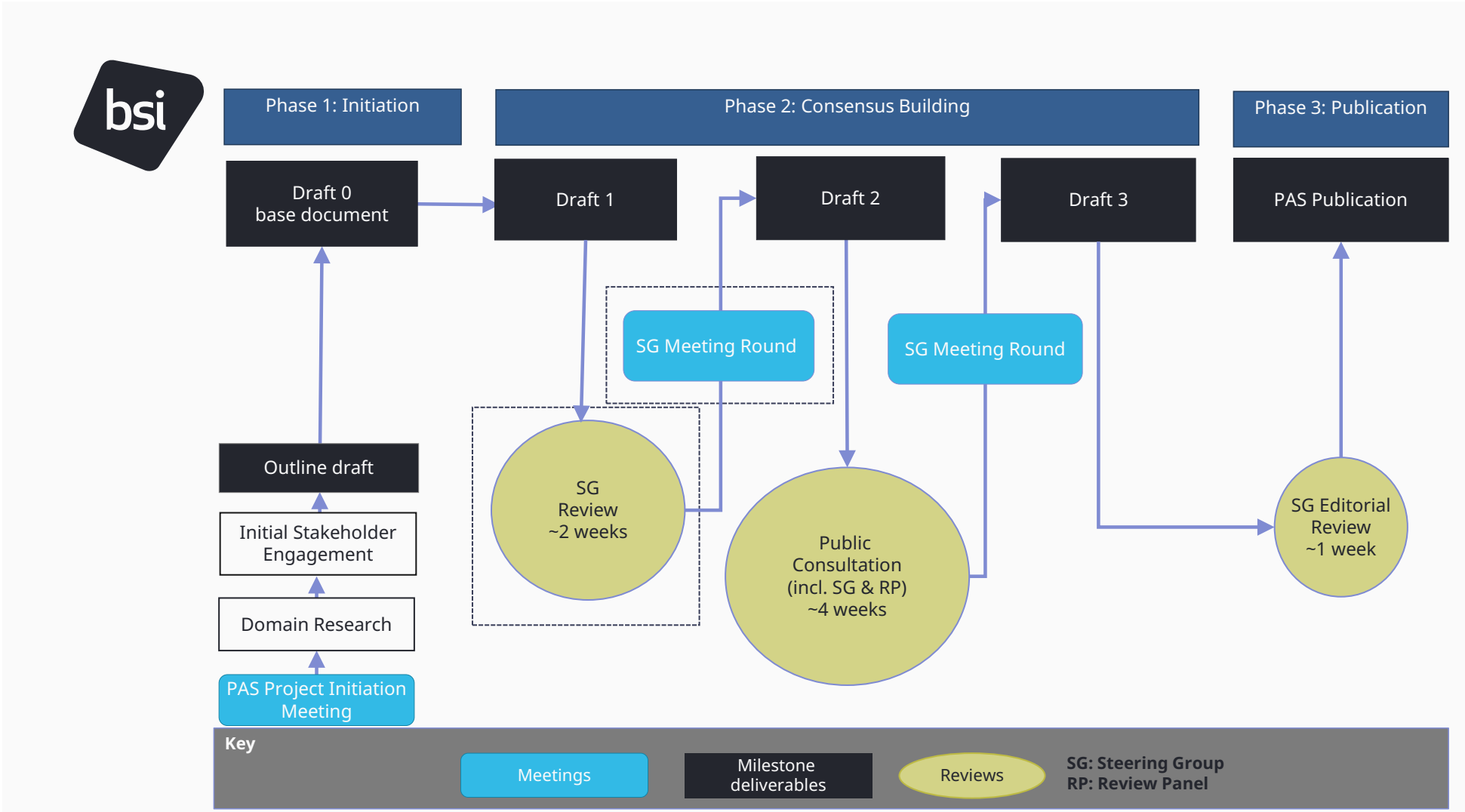
# UPDATE PROCESS


Phase 1: Initiation
Phase 2: Consensus Building
Phase 3: Publication
Draft 0
base document
Draft 1
Draft 2
Draft 3
PAS Publication
SG Meeting Round
SG Meeting Round
Outline draft
SG
Review
~2 weeks
Public
Consultation
(incl. SG & RP)
~4 weeks
SG Editorial
Review
~1 week
Initial Stakeholder
Engagement
Domain Research
PAS Project Initiation
Meeting
Key
Meetings
Milestone
deliverables
Reviews
SG: Steering Group
RP: Review Panel

## REQUEST FOR COMMENTS

- Suggestions and feedback welcome
- Membership of industrial steering committee
- Opportunity to participate in public review (October)

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