

# An overview of ISO/TC 307 – Blockchain and distributed ledger technologies

2nd JPEG Workshop on Media Blockchain  
82nd ISO/IEC JTC1/SC29/WG1 (JPEG) Meeting

IST, Lisbon, 22 January 2019

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# What is ISO/TC 307?

- ISO Technical Committee

- Proposal from Australia: ISO/TS/P 258 (April 2016)
  - Standardization of blockchains and distributed ledger technologies (BDLT) to support interoperability and data interchange among users, applications and systems
  - Very broad in scope; needed to involve technical and business leaders; maturity and readiness for standards
- ISO/TC 307 established on September 2016
- National “mirror committees” formed, developed initial points of view
- Meetings:
  - 1<sup>st</sup> meeting in Sydney, April 2017
  - 2<sup>nd</sup> meeting in Tokyo, November 2017
  - 3<sup>rd</sup> meeting in London, May 2018
  - 4<sup>th</sup> meeting in Moscow, October 2018
  - 5<sup>th</sup> meeting in Ireland, May 2019
  - 6<sup>th</sup> meeting in India, November 2019

# ISO/TC 307 Scope

- Scope
  - Standardisation of blockchain technologies and distributed ledger technologies (BDLT).

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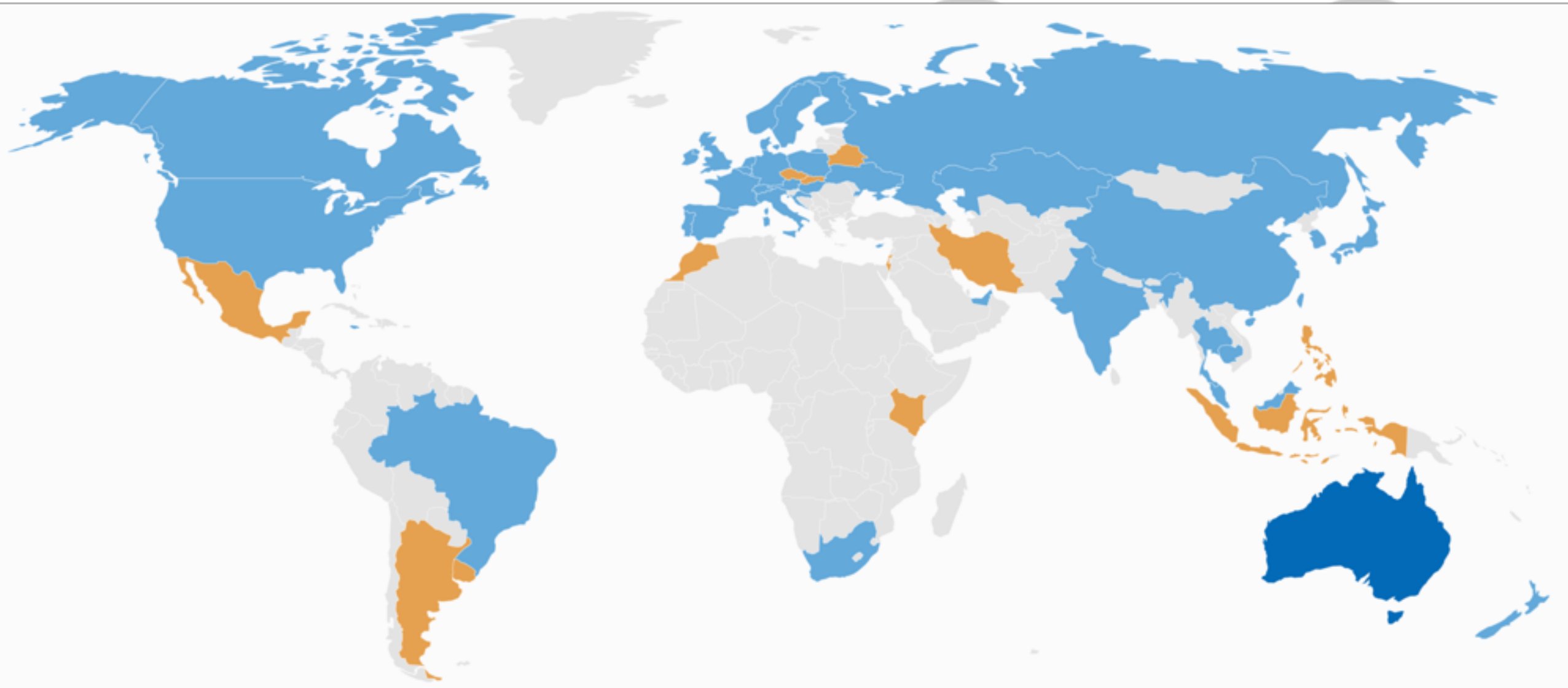
ISO standards under  
development \*  
under the direct responsibility  
of ISO/TC 307

39

Participating members

13

Observing members



Secretariat

Participating Members (39)

Observing Members (13)

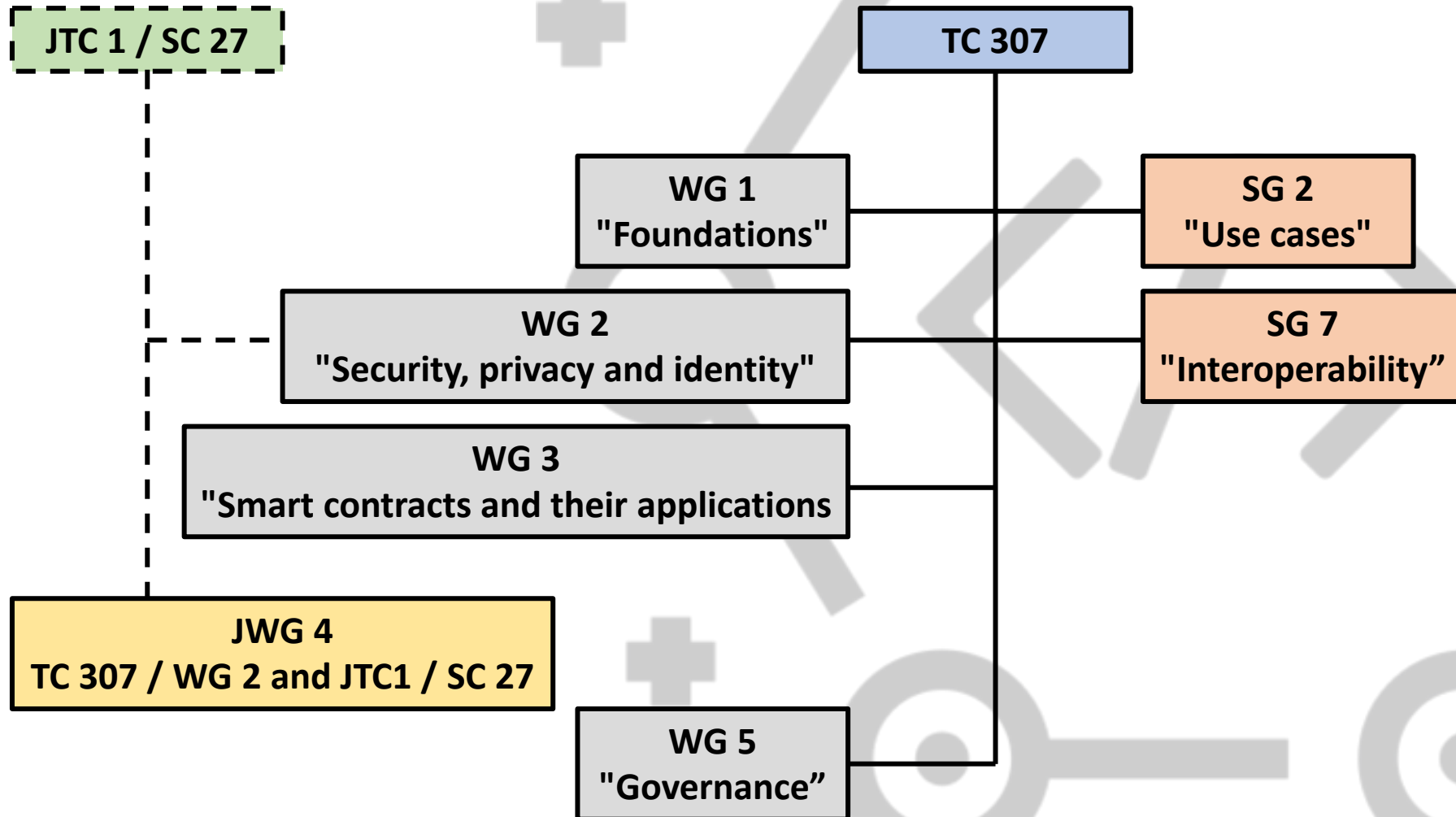
# CT 208 – Blockchain and Distributed Ledger Technologies (BDLT)

- IPQ – Portuguese Institute of Quality
- Coordination
  - ITSMF – IT Service Management Forum Portugal
  - President: José António Costa
- Members:
  - Everis Portugal, SA
  - ISCTE-IUL/ISTAR-IUL
  - IST/INESC
  - Independent consultants

# Standards/Projects under development

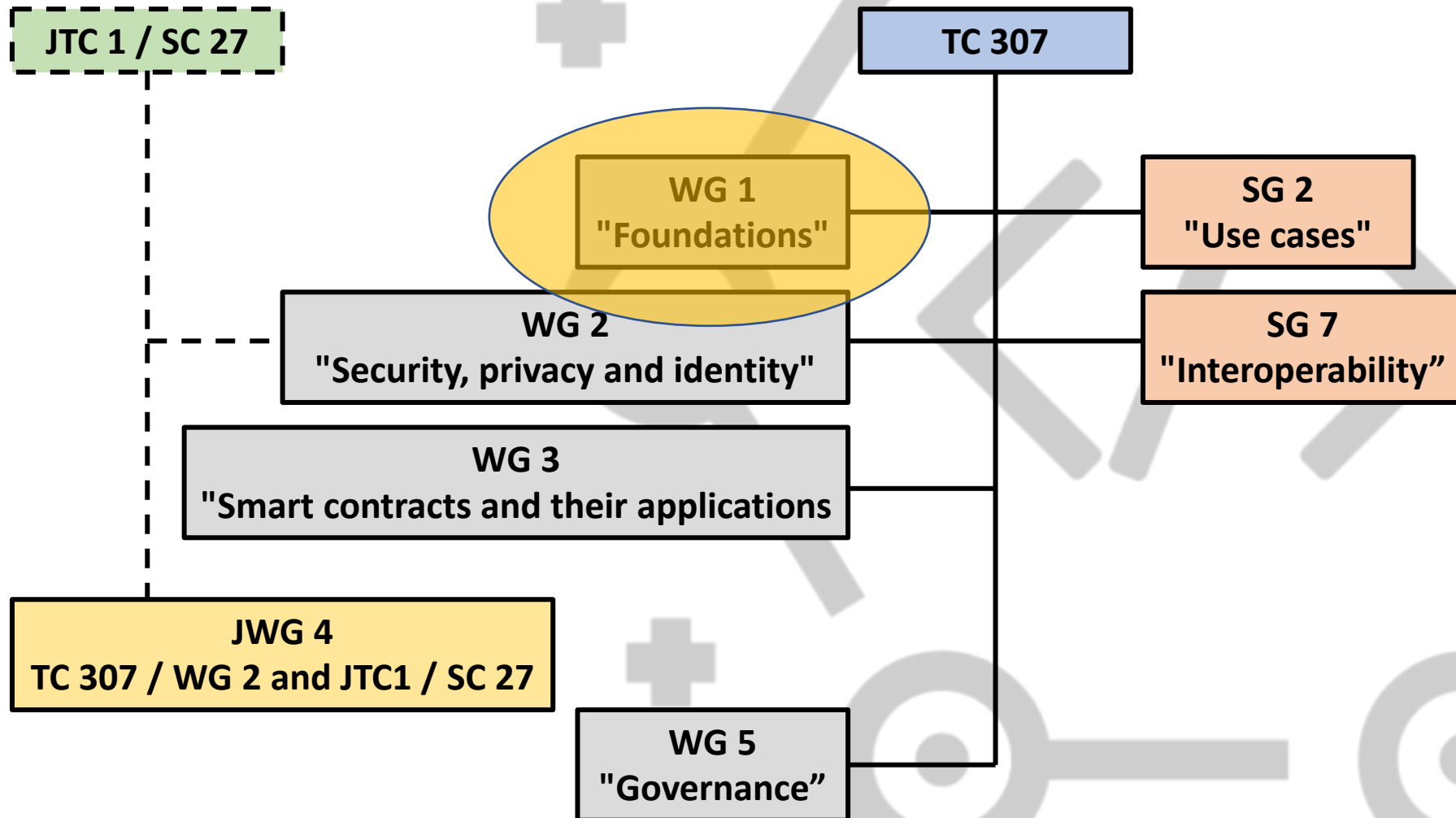
- ISO/CD 22739 BDLT -- Terminology [**Under development**]
- ISO/NP TR 23244 BDLT -- Privacy and personally identifiable information protection considerations [**Under development**]
- ISO/NP TR 23245 BDLT -- Security risks, threats and vulnerabilities [**Under development**]
- ISO/NP TR 23246 BDLT -- Overview of identity management using BDLT [**Under development**]
- ISO/CD 23257 BDLT -- Reference architecture [**Under development**]
- ISO/AWI TS 23258 BDLT -- Taxonomy and Ontology [**Under development**]
- ISO/AWI TS 23259 BDLT -- Legally binding smart contracts [**Under development**]
- ISO/DTR 23455 BDLT -- Overview of and interactions between smart contracts in BDLT [**Under development**]
- ISO/NP TR 23576 BDLT -- Security management of digital asset custodians [**Under development**]
- ISO/NP TR 23578 BDLT -- Discovery issues related to interoperability [**Under development**]
- ISO/NP TS 23635 BDLT -- Guidelines for governance [**Under development**]

# (actual) Structure



ISO/IEC JTC 1/SC 27  
IT Security techniques

# (actual) Structure



ISO/IEC JTC 1/SC 27  
IT Security techniques

# ISO/CD 23257

## Reference architecture

- **Specifies a reference architecture** for distributed ledger technology (DLT) systems.
- The reference architecture **includes**:
  - DLT concepts
  - DLT architecture views
  - DLT functional components
  - DLT roles
  - DLT activities and their relationships.

# ISO/AWI TS 23258

## Taxonomy and Ontology

- **Specifies a taxonomy and an ontology** for blockchain and distributed ledger technologies (DLT).
  - The **taxonomy** includes a **taxonomy of concepts (terms)**, a **taxonomy of blockchain and DLT systems** and a **taxonomy of use cases**.
  - The **ontology** includes **classes and attributes** as well as **relations between concepts**.

# ISO/CD 22739

## Terminology

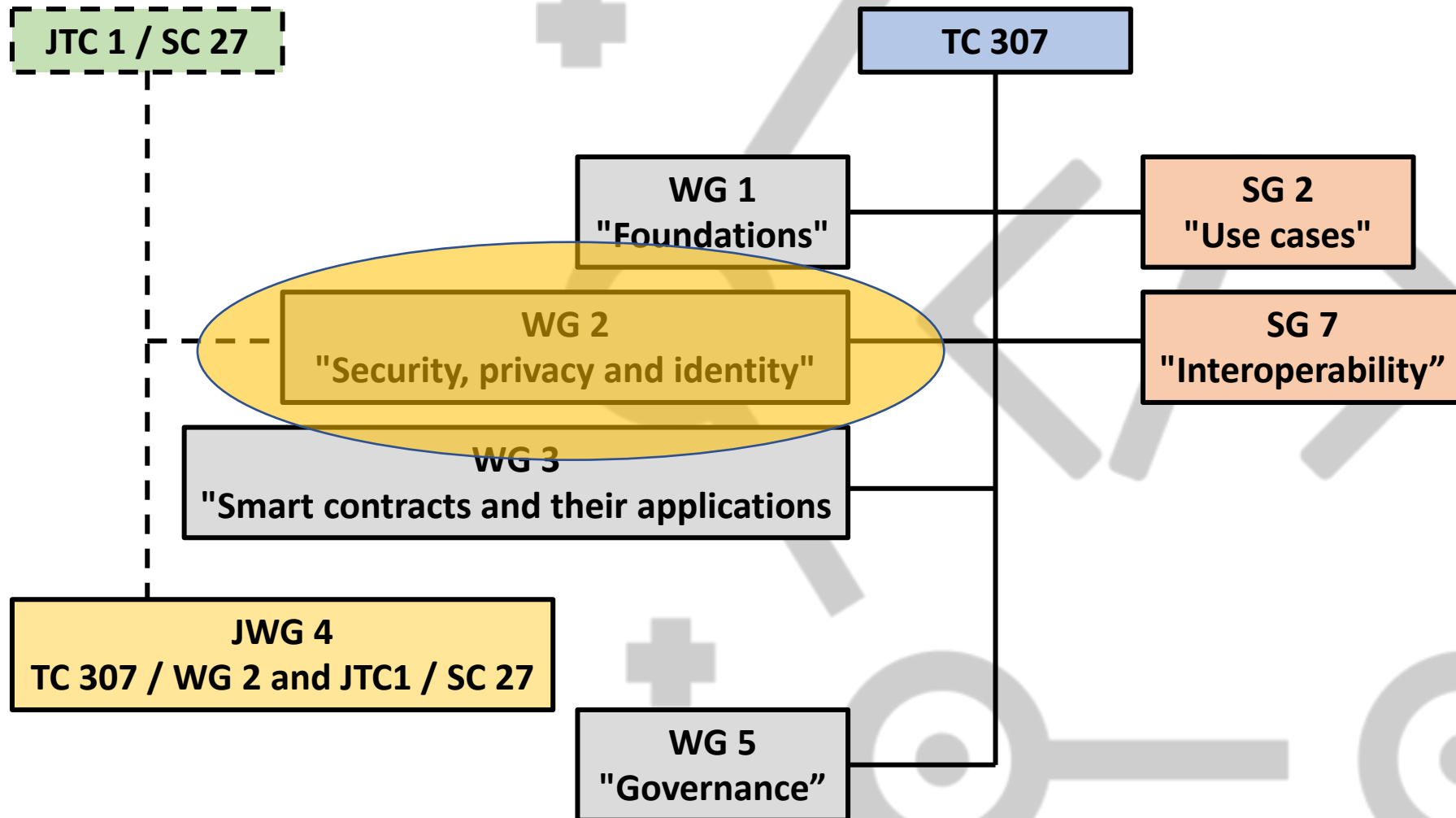
- This document provides **fundamental terminology** for Blockchain and distributed ledger technologies.

# ISO/NP TR 23578

## Discovery issues related to interoperability

- Produce a TR to address blockchain and DLT **discovery interoperability issues.**

# (actual) Structure



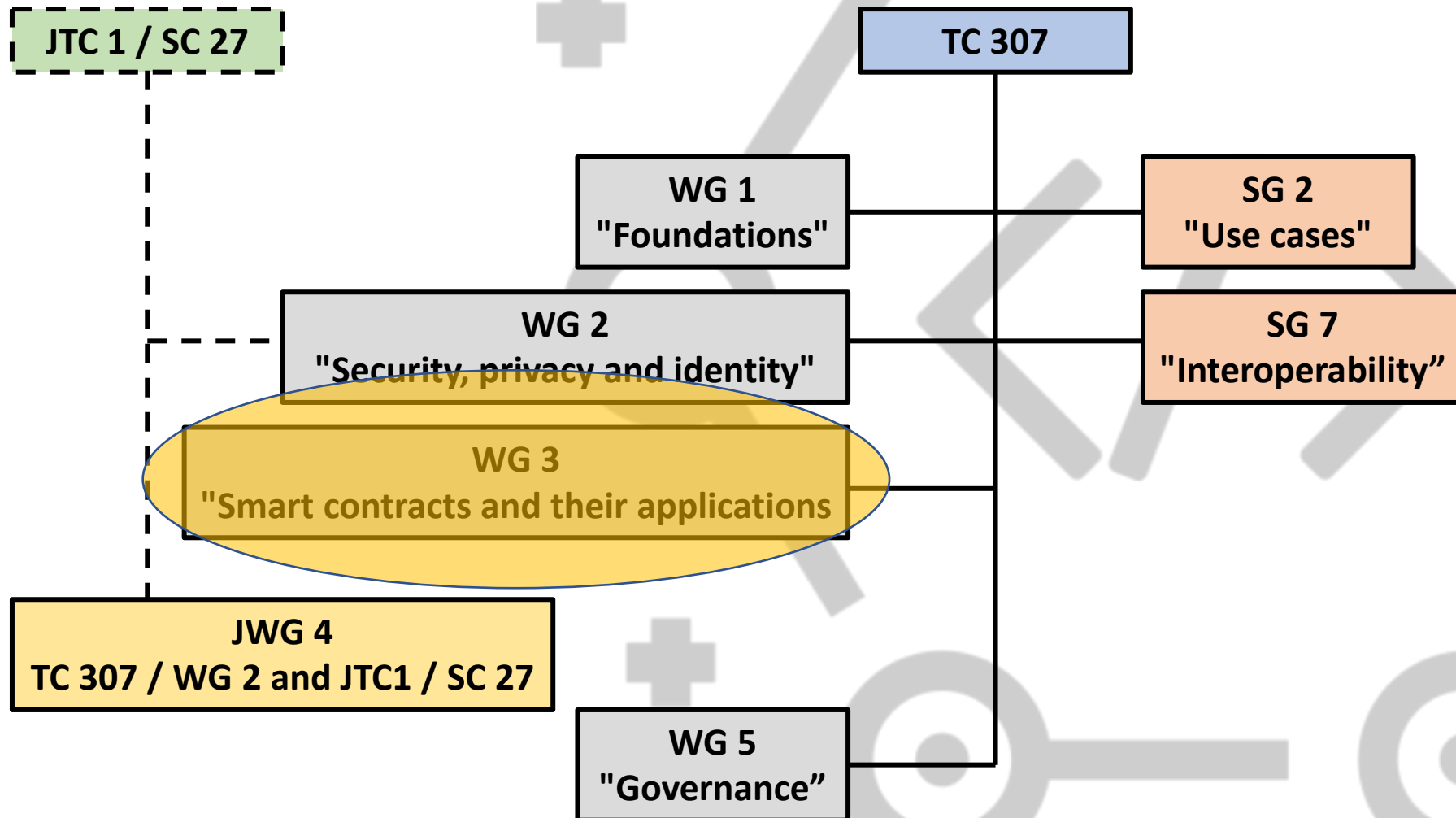
ISO/IEC JTC 1/SC 27  
IT Security techniques

# ISO/NP TR 23576

## Security management of digital asset custodians

- Illustrates the **threats, risks, and controls** on the following:
  - **Online systems of digital asset custodians** that provide **exchange services** to their customer (consumers and trade partners);
  - **Asset information** (including the private key of the digital asset) that the online system of a **digital asset custodian manages**;
  - **Social impact** that can **arise** from the **discrepancy between the required security measures** and those which **are implemented in digital asset custodian systems**.

# (actual) Structure



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# ISO/AWI TS 23259

## Legally binding smart contracts

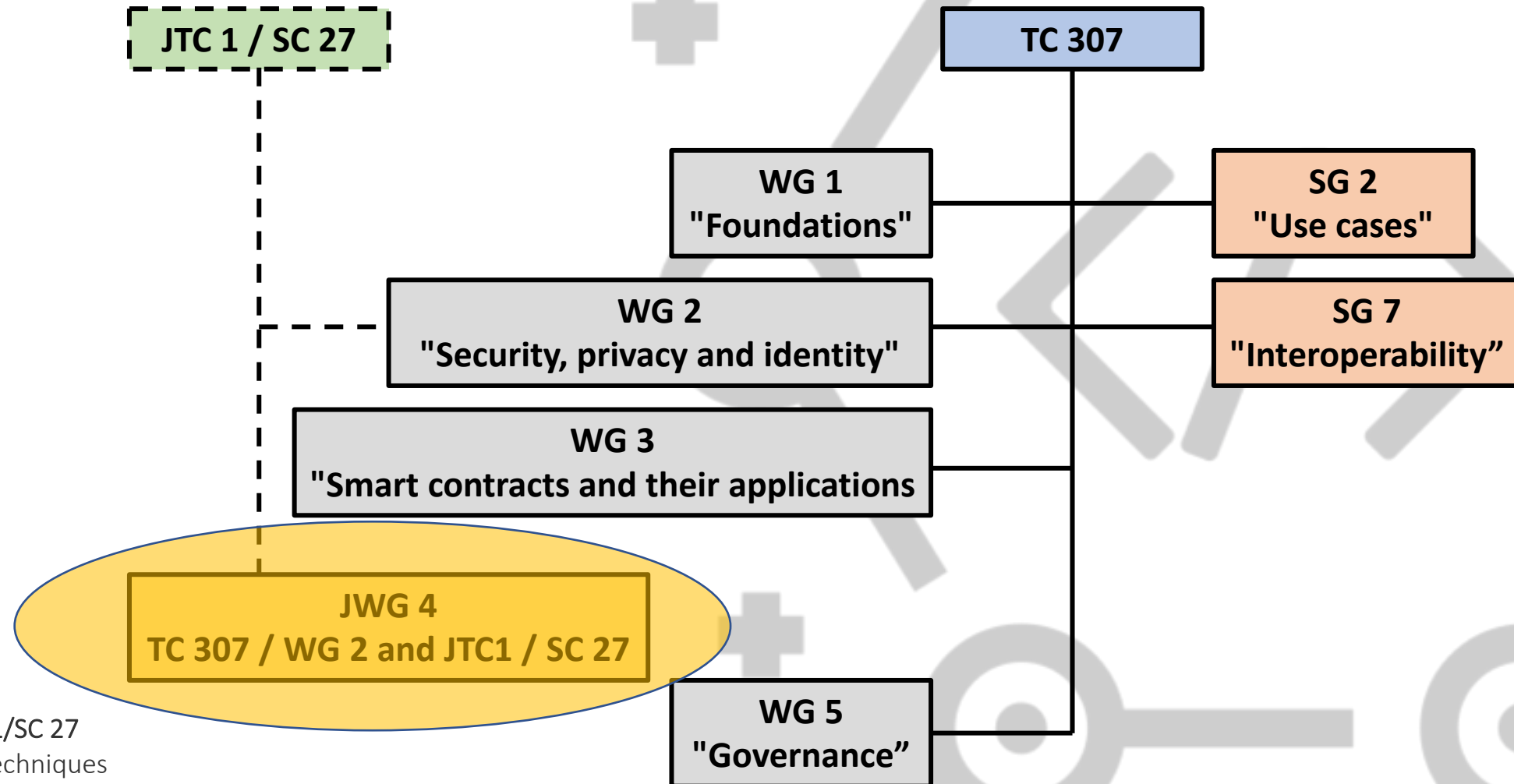
- **Defines objects** (elements, dependencies and interactions) **for modelling smart contracts** with a **primarily legal binding intention**.
- The modelling elements may be **useful for purely automating smart contracts in terms of distributed software**.
- The term ‘legal binding intention’ **indicates an add-on to pure automation and expresses a link to contractual clauses with a more formal need on interactions, processes and documentation as required to transfer legal processes into code**.
- The goal is **to support the documentation and operation of legal processes on DLT systems**

# ISO/DTR 23455

## Overview of and interactions between smart contracts in blockchain and distributed ledger technology systems

- Provides an **overview of smart contracts** in BC/DLT systems; **describing** what smart contracts **are** and **how they work**.
- Discusses **methods of interaction between multiple smart contracts** - focusing on technical aspects of smart contracts.

# (actual) Structure



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# ISO/NP TR 23244

## Privacy and personally identifiable information protection considerations

- Provides an **overview** of **privacy** and **Personally Identifiable Information (PII) protection** as they apply to Blockchain and Distributed Ledger Technologies (DLT) systems.
- The **following components** relate to privacy and the processing of PII in Blockchain and DLT systems and make up the privacy framework described in this document:
  - actors and roles;
  - interactions;
  - recognizing PII;
  - privacy safeguarding requirements;
  - privacy policies; and
  - privacy controls.

# ISO/NP TR 23246

## Overview of identity management using blockchain and distributed ledger technologies

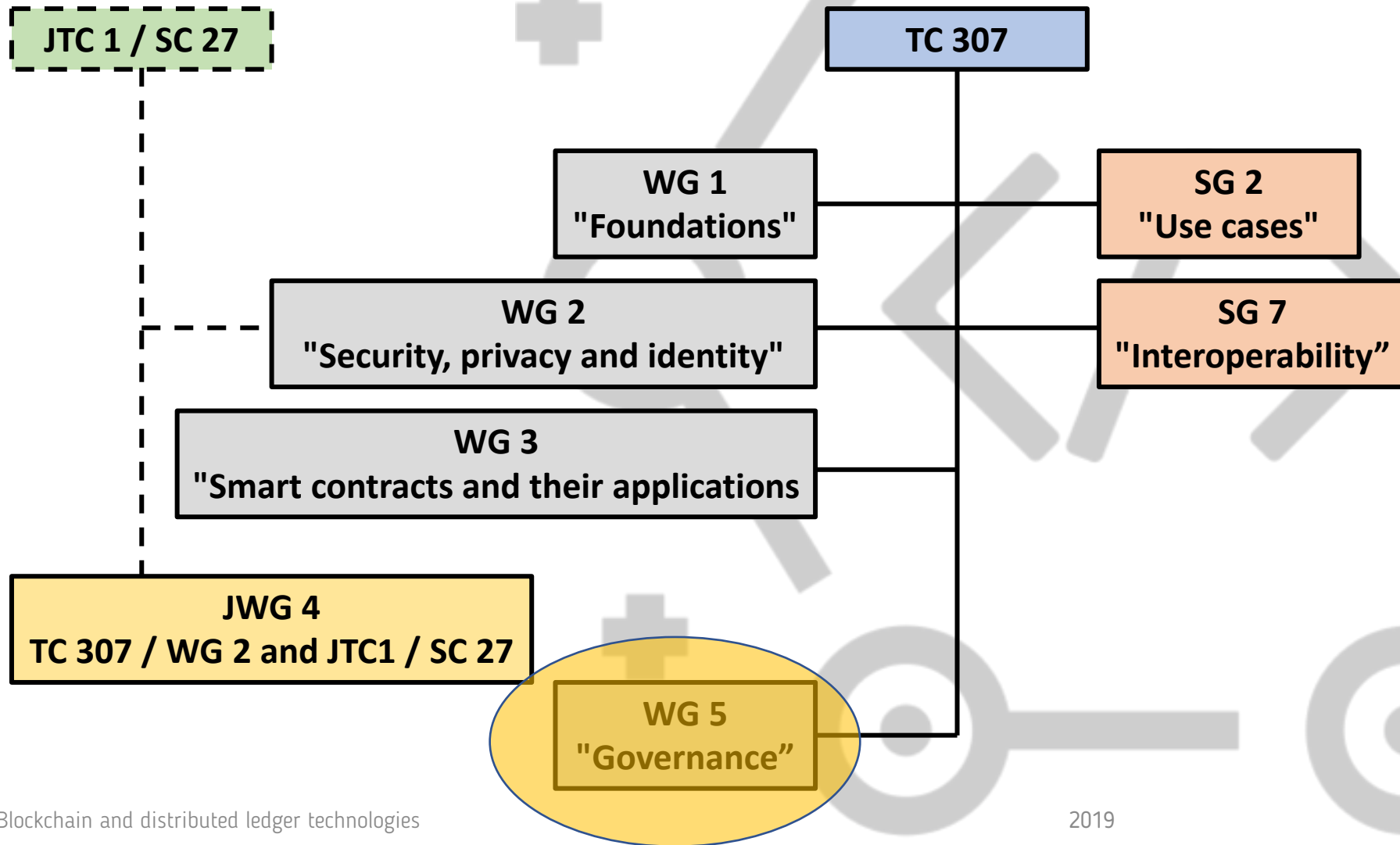
- Provides **Concepts & considerations** on **leveraging** blockchain & Distributed Ledger Technologies (DLT) for **decentralized, self-sovereign identity**.
- Provide **examples** and **best practices** on topics such as:
  - **Managing Identity** for Individuals, Organizations, Things (IoT & Objects), Processes and Other Entities **including within and across distributed ledger systems**
  - **Description of the actors** and **their interactions** and common interfaces in the system
  - **Architecture** of such a system
  - **Existing** relevant **standards** and **frameworks**

# ISO/NP TR 23245

## Security risks, threats and vulnerabilities

- Describes **security risks** and **vulnerabilities** specific to Blockchain and DLT systems
  - Network security
  - Proper choice and configuration of cryptographic algorithms and protocols
  - Cryptographic Key management
  - Security management process
  - Secure implementation and certification
  - Availability

# (actual) Structure



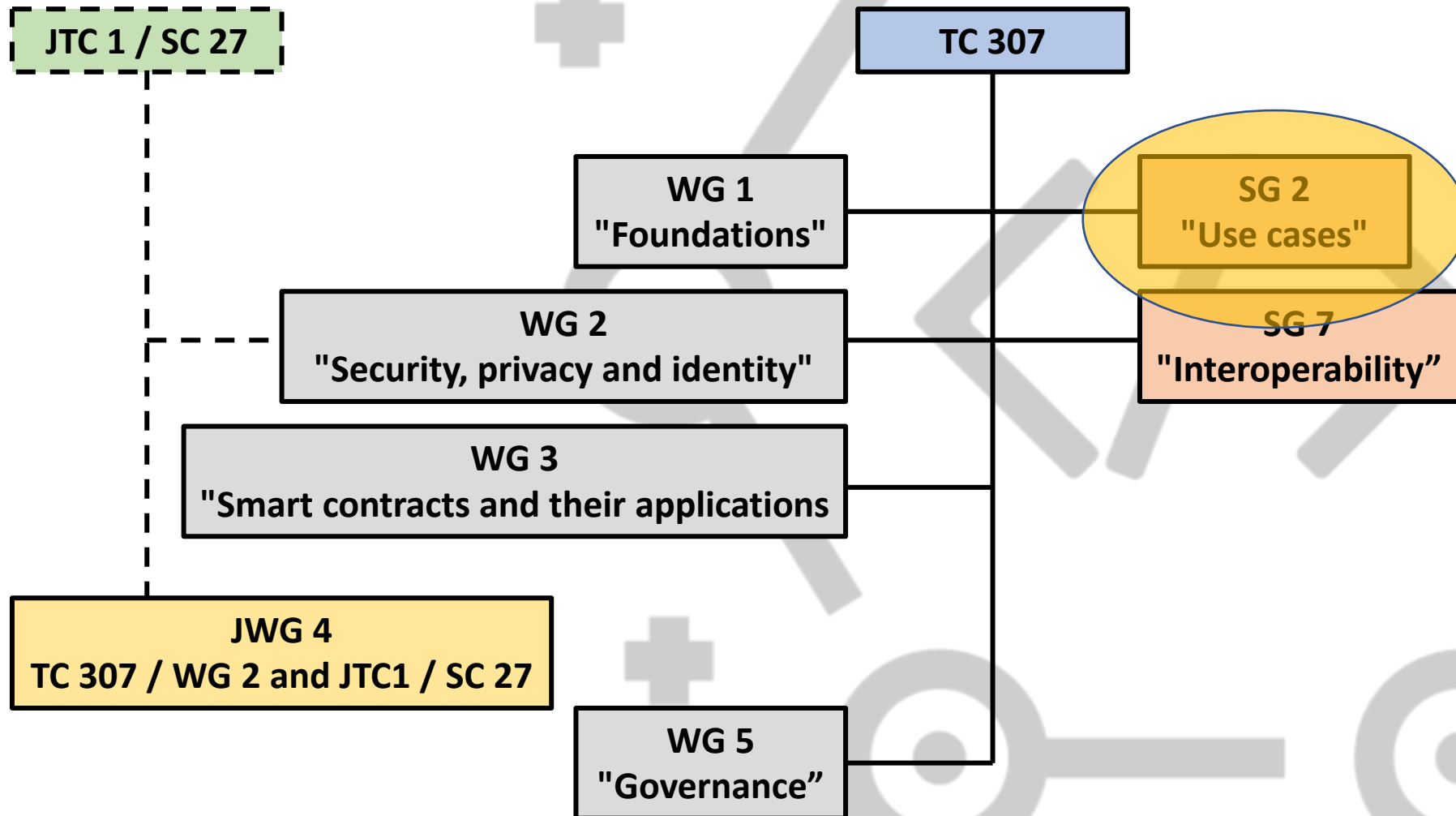
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IT Security techniques

# ISO/NP TS 23635

## Guidelines for governance

- Provides **guiding principles** and a framework for the governance of distributed ledger systems.
- Provides **guidance on the effective, efficient, and acceptable use** of distributed ledger systems **for the fulfilment of governance objectives** including **risk** and **regulatory contexts**.

# (actual) Structure

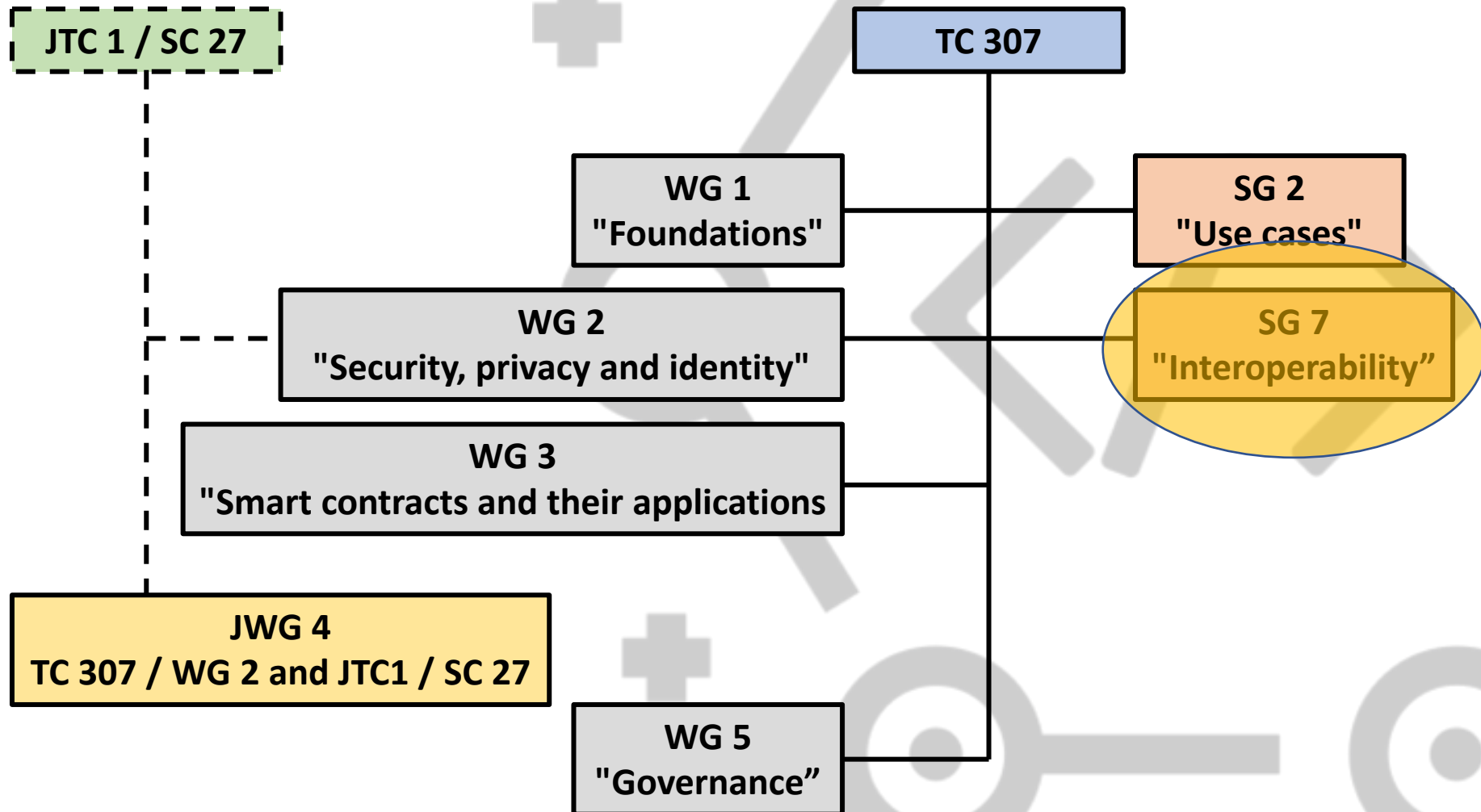


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# SG 2 – “Use cases”

- SG 2 – “Use cases”
  - Study Group on Use Cases (produce a TR)

# (actual) Structure



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# SG 7 – “Interoperability of blockchain and distributed ledger technology systems”

- SG 7 – “Interoperability of blockchain and distributed ledger technology systems”
  - Study Group on Interoperability of blockchain and distributed ledger technology systems (produce a Report)

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