

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:
 - 1st meeting in Sydney, April 2017
 - 2nd meeting in Tokyo, November 2017
 - 3rd meeting in London, May 2018
 - 4th meeting in Moscow, October 2018
 - 5th meeting in Ireland, May 2019
 - 6th meeting in India, November 2019

ISO/TC 307 Scope

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

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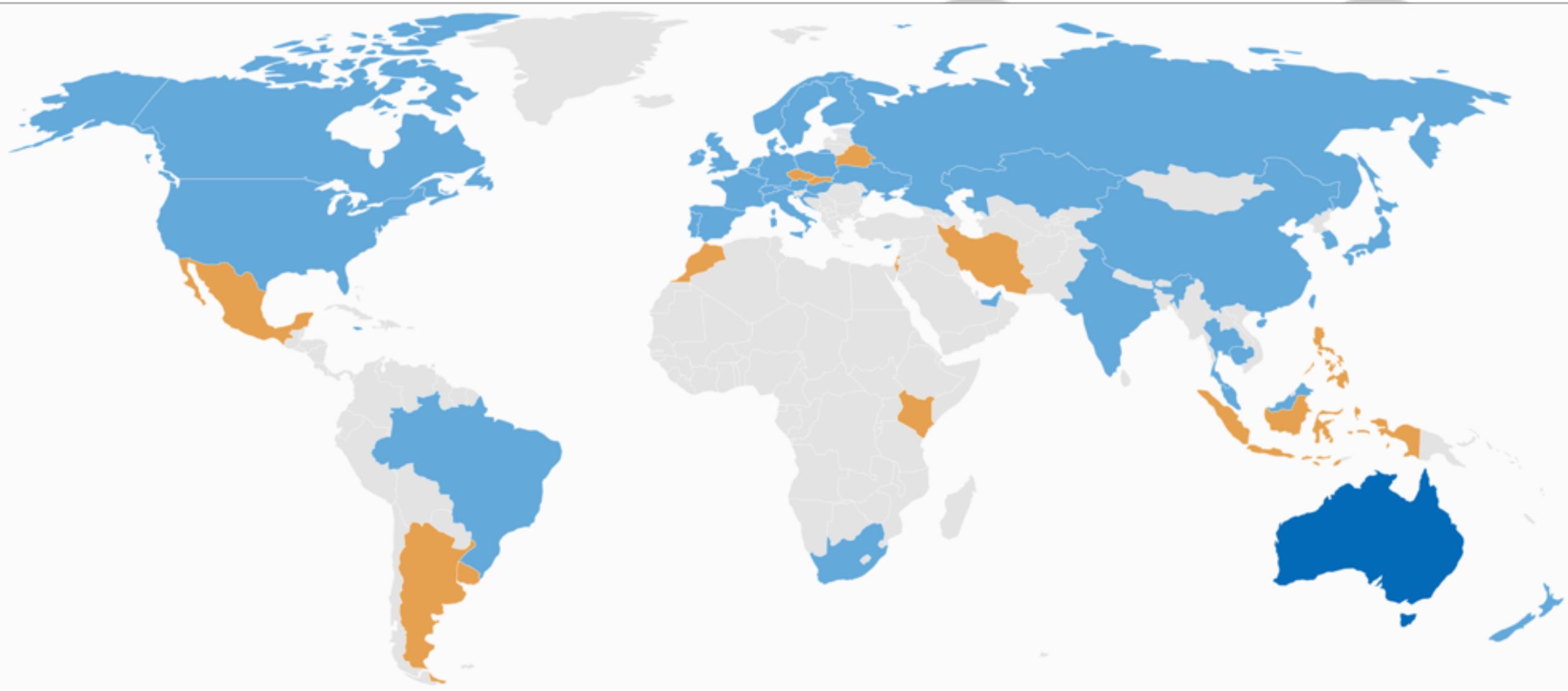
ISO standards under
development *
under the direct responsibility
of ISO/TC 307

39

Participating members

13

Observing members



Secretariat 

Participating Members (39) 

Observing Members (13) 

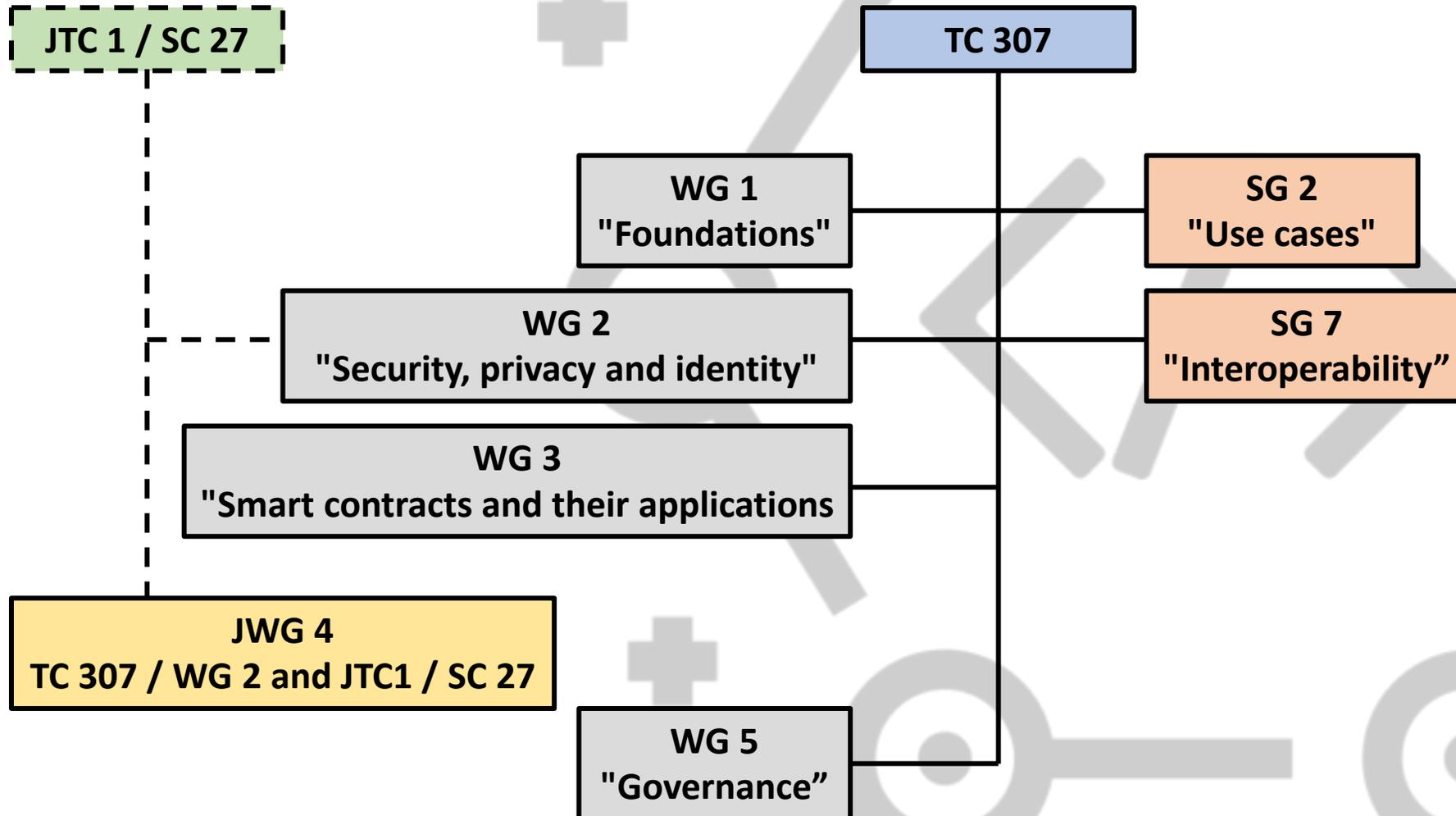
CT 208 – Blockchain and Distributed Ledger Technologies (BDLT)

- 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

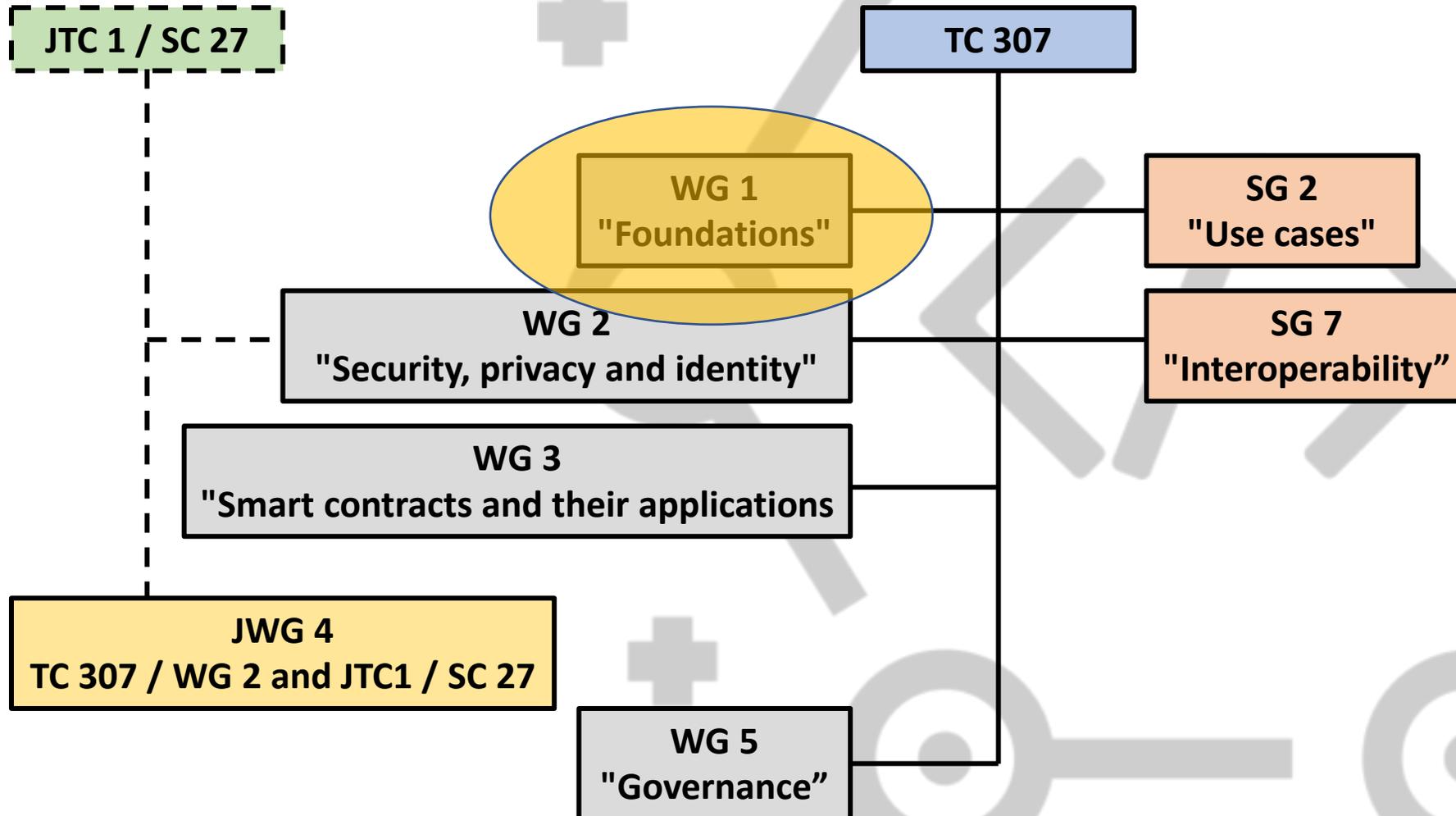
- ISO/CD 22739 BDLT -- Terminology [**Under development**]
- ISO/NP TR 23244 BDLT -- Privacy and personally identifiable information protection considerations [**Under development**]
- ISO/NP TR 23245 BDLT -- Security risks, threats and vulnerabilities [**Under development**]
- ISO/NP TR 23246 BDLT -- 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

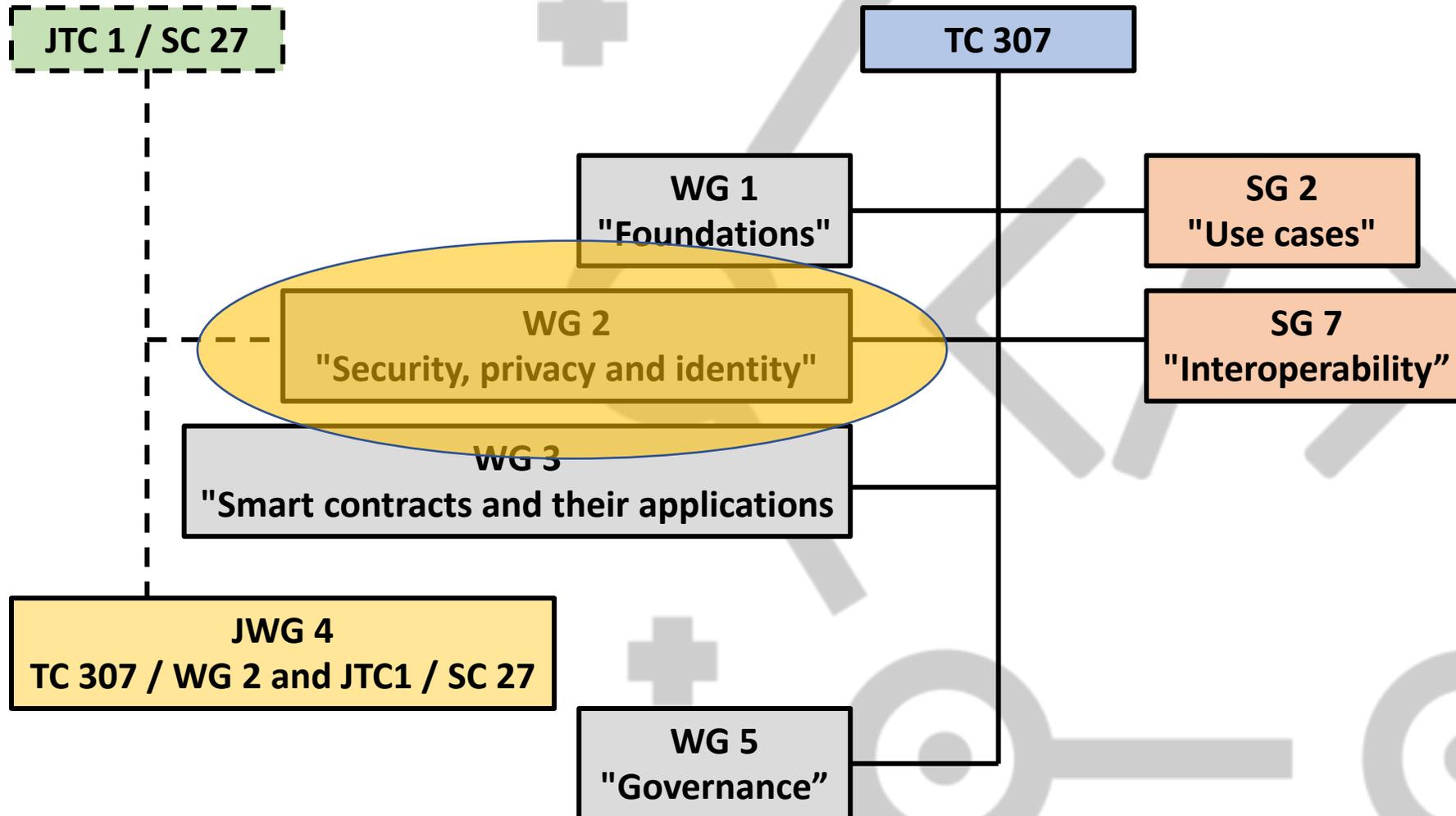
- This document provides **fundamental terminology** for Blockchain and distributed ledger technologies.

ISO/NP TR 23578

Discovery issues related to interoperability

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

(actual) Structure



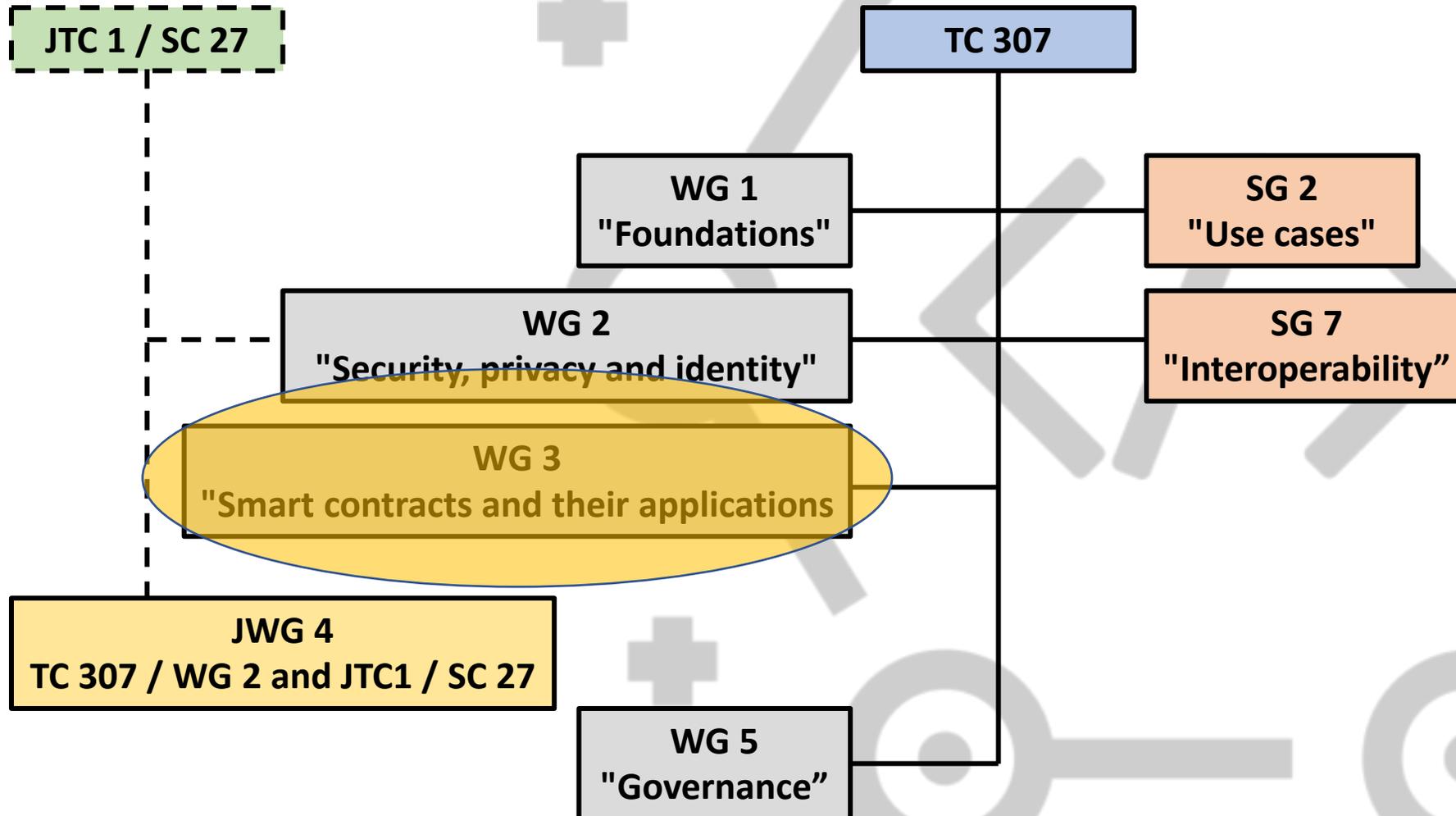
ISO/IEC JTC 1/SC 27
IT Security techniques

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



ISO/IEC JTC 1/SC 27
IT Security techniques

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**

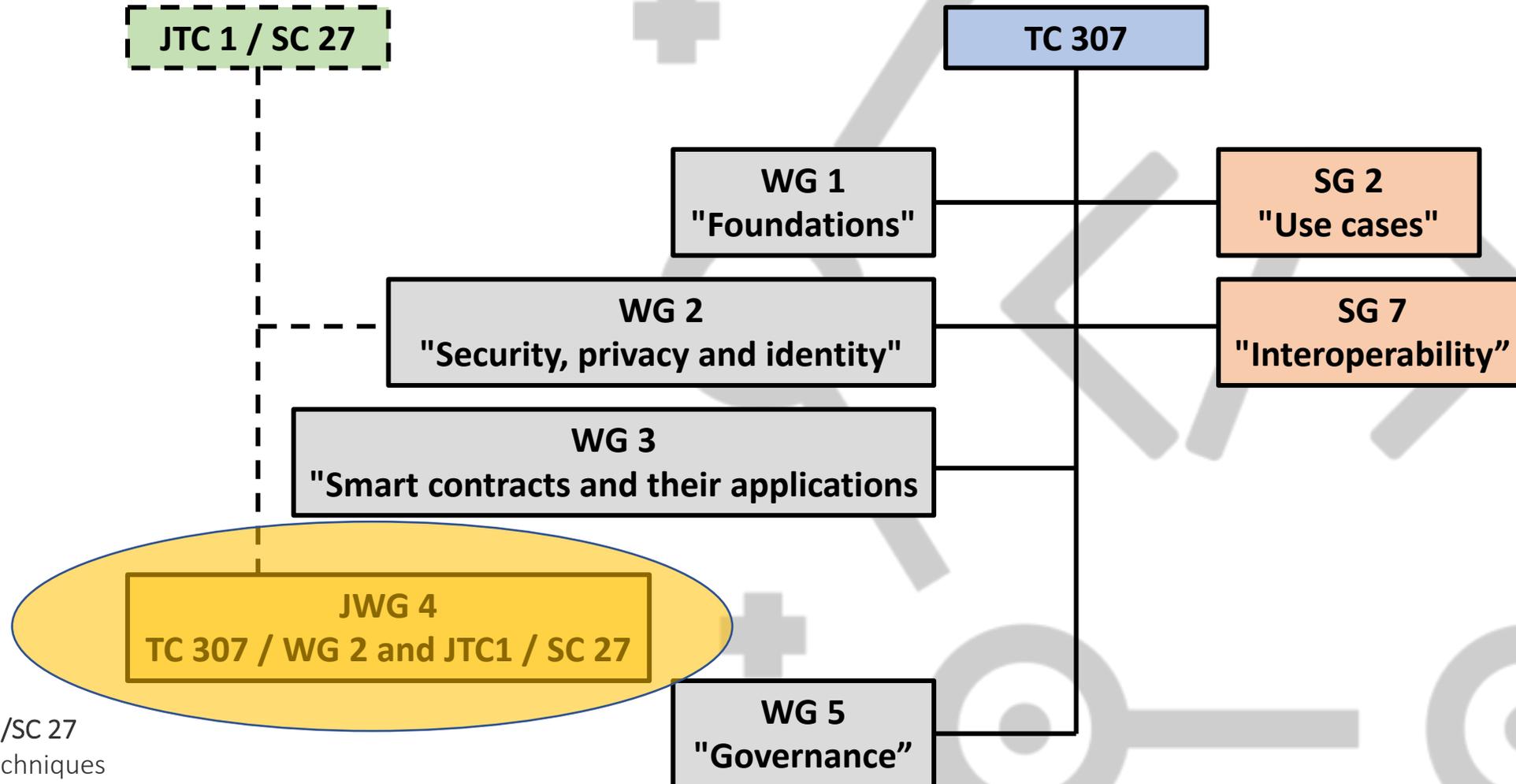


ISO/DTR 23455

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



ISO/IEC JTC 1/SC 27
IT Security techniques

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

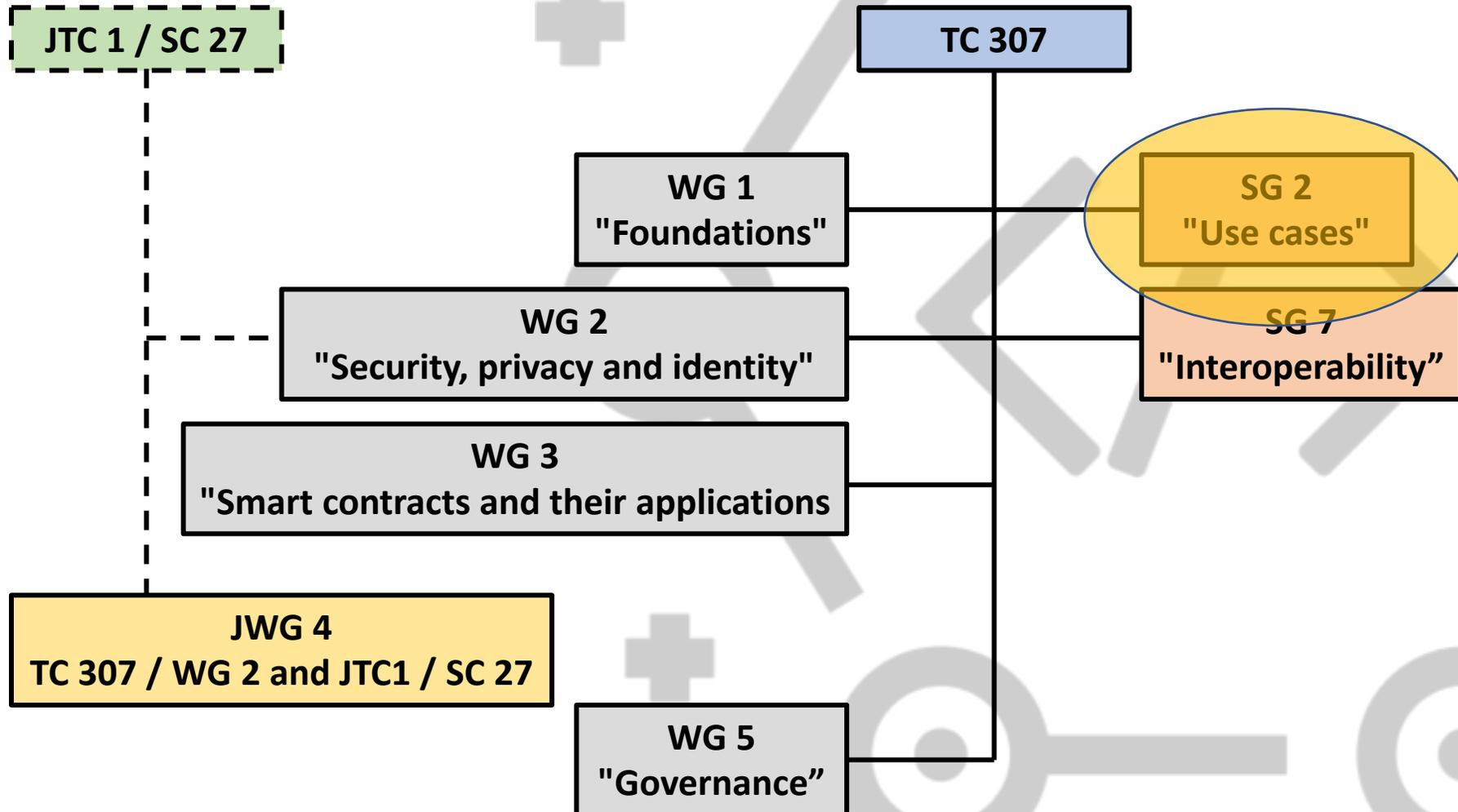
- Describes **security risks** and **vulnerabilities** specific to Blockchain and DLT systems
 - Network security
 - Proper choice and configuration of cryptographic algorithms and protocols
 - Cryptographic Key management
 - Security management process
 - Secure implementation and certification
 - Availability

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

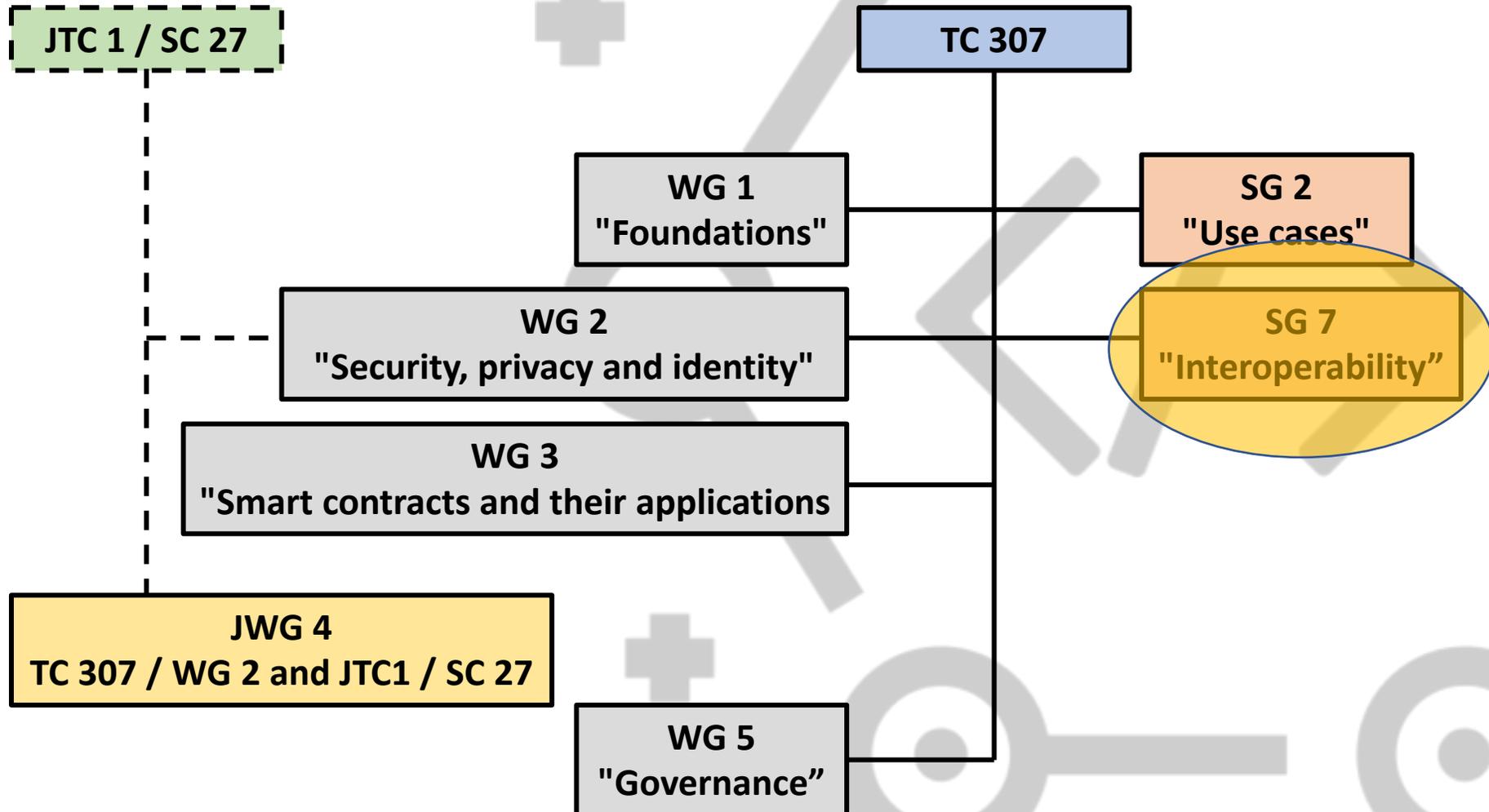


ISO/IEC JTC 1/SC 27
IT Security techniques

SG 2 – “Use cases”

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

(actual) Structure



ISO/IEC JTC 1/SC 27
IT Security techniques

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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