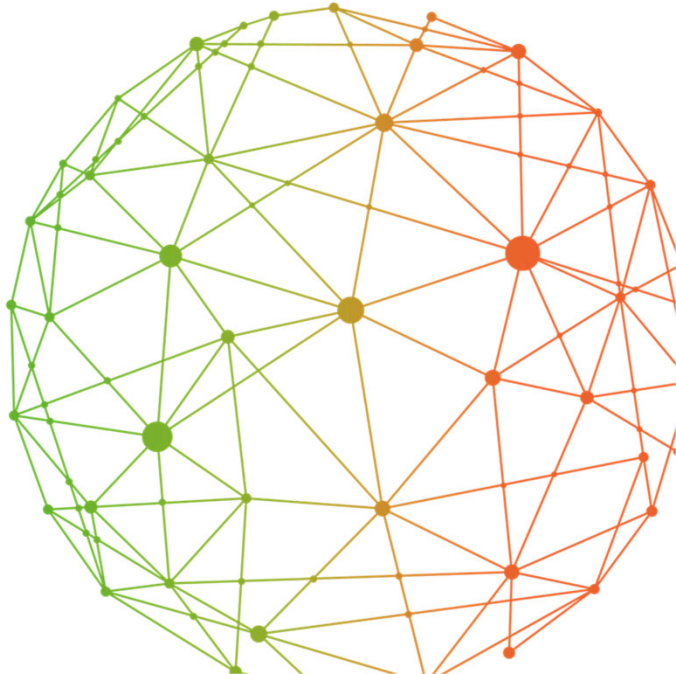
Data Spaces Symposium

15:30

Share data. Unlock Value. Boost Impact: The way forward

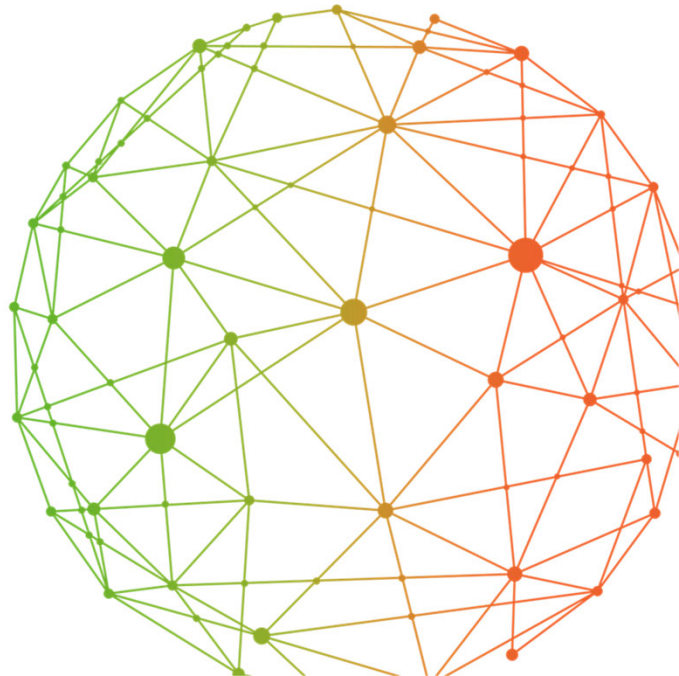
Closing plenary session



Data Spaces Symposium

Panel discussion | Accelerating data economy transformation with data spaces: Business, technical, innovation and international collaboration

Ana Garcia & Manuel Gutierrez, Alberto Gago,
Bjoern Juretzki, Hiroshi Mano, Milena Karpinska,
Roberto Lotti, Sebastian Kleff, Thomas Hahn



The Need for International Standardization of Data Spaces

Hiroshi Mano
Data Society Alliance

March 2025

Hiroshi Mano Phd
EverySense,Inc./EverySense Japan K.K. , C.E.O.
Koden TI, K.K.
Data Society Alliance, Secretary General
Keio University SFC, Project Professor

- Established Root Inc. in 1993.
- Developed digital wireless communication devices and proposed a total network solution for converging analog and digital technologies. In addition, he has been participating in numerous public and private councils and R&D initiatives for WLAN-based high-speed mobile communications system development, technology enabling and commercialization, wireless adaptation and local information networking.
- A chair for IEEE 802.11 TGai WG for international standardization since 2010. And awarded Japan Communication Minister's Award 2017 for Information and Communication Technology Prize for the standardization efforts.
- In 2014, established EverySense, Inc. In U.S. Silicon Valley. EverySense developed an IoT Data trading platform.
- Founder and Secretary General of Data Society Alliance (DSA) is an industry-academic-government alliance with the cooperation of Japan Cabinet Office, Japan Ministry of Internal Affairs and Communications, Japan Ministry of Economy.
- Has been deeply involved in Japan and overseas in standardization and rule proposals in wireless communications, Internet, data trading, etc. in Japan and overseas, and contributed to the Big Data strategy proposal in the G7 ICT Ministerial Meeting in Turin in 2017.
- Also, he is in charge of the IEEE P3800 DTS(Data Trading System) Working Group chair and a member of IEEE SASB (Standard Association Standard Board).
- In 2023, he is chair of data relation WG of SIP3 of CSTI.

International Standardization of Data Spaces

- The efforts to certify a certain quality and standards for the data space indicated by Gaia-X in Europe are recognized as essential for future implementation.
- This certification must become a familiar indicator and evaluation standard internationally by establishing essential matters in international standardization organizations through international agreements.
- We also recognize that such certification standards require continuous operation and updating.
- In particular, we believe consensus, due process, openness, the right of appeal, and balance are essential for promoting standardization.
- Therefore, to develop the Gaia-X and DSBA initiatives internationally, we recommend that discussions be held within the framework of an international standardization organization or international collaboration (IOFDS, etc.).

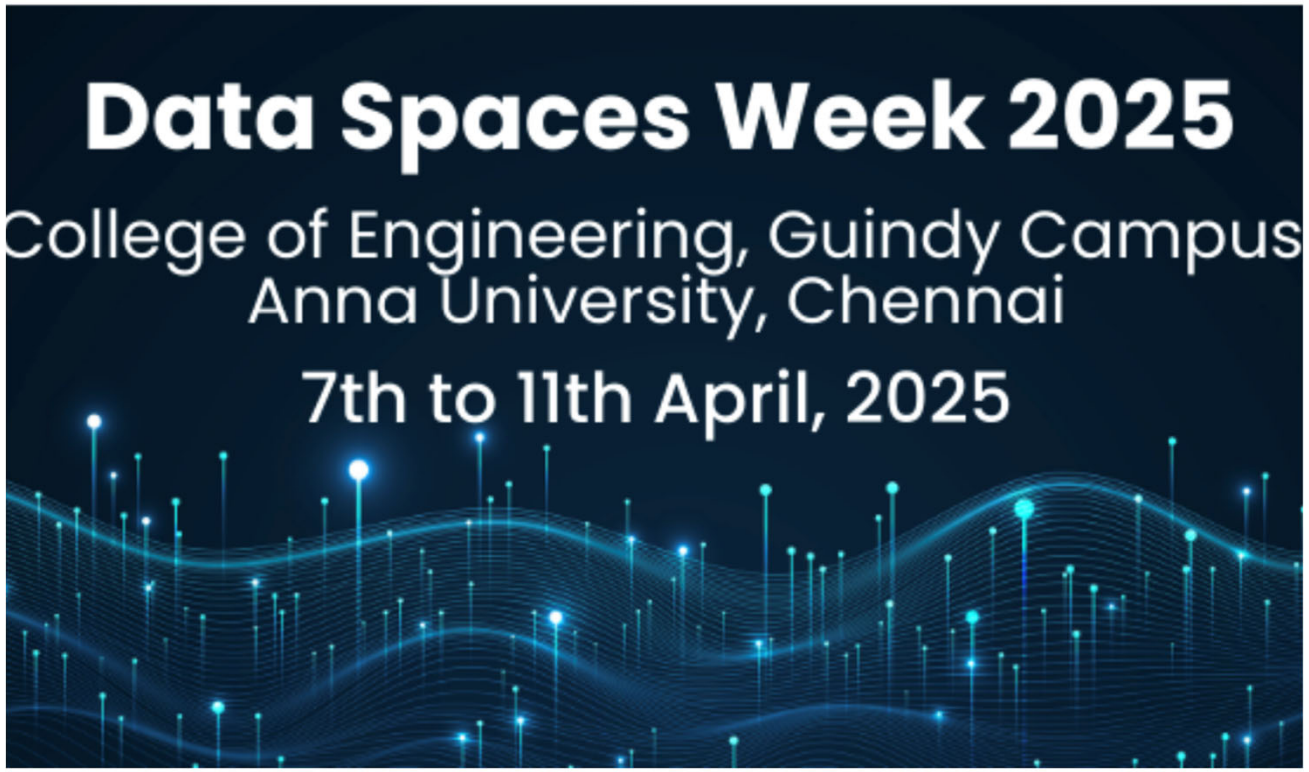
IOFDS https://iofds.org

Definition of “Data Space”

- A decentralized ecosystem with common policy and rules defined by a governance framework that enables secure and trustworthy data transactions between participants while supporting trust and data sovereignty.

DATA Space Week 2025

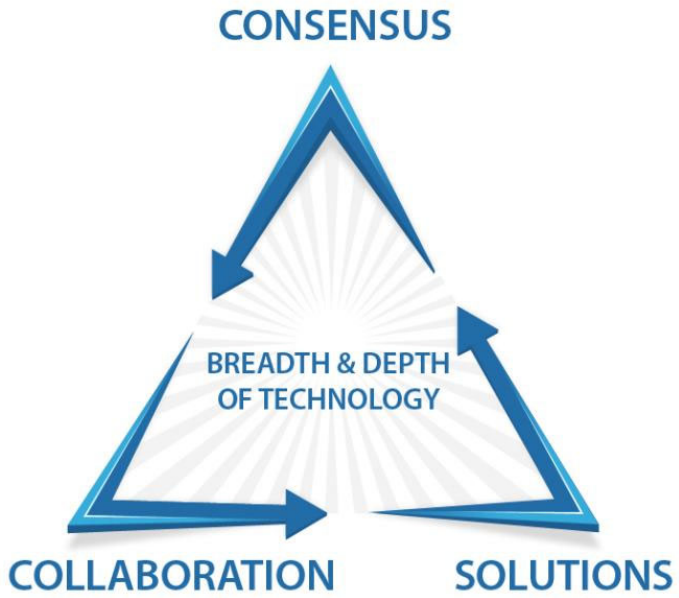
https://konfhub.com/ieee-dsw-2025?fbclid=IwY2xjawIsqOxleHRuA2FlbQIxMQABHfYKJtGzCIoONqxsEH65qbk1aFcyqc2yBP6JuzuYJ2bd0gAdKGG7bTfCKg_aem_2o2mMFkY7GYFQfLR38vGxQ



Back up slides

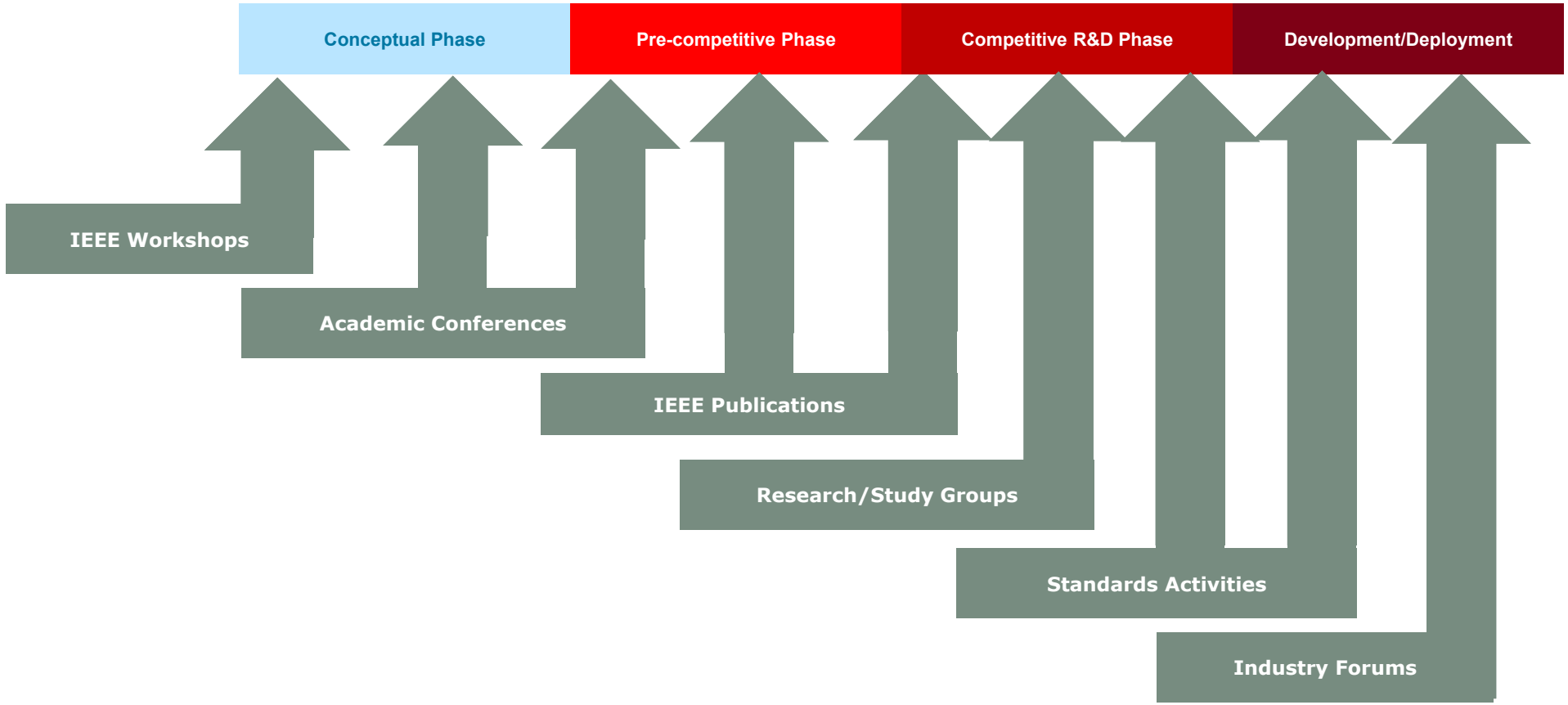
Globally Respected Standards Process

- Consensus
- Due Process
- Openness
- Right of Appeal
- Balance



- Adheres to the WTO/TBT Principles
- Based on rigorous peer-review
- Reflects the collective consensus view of participants
- Results in high quality globally relevant technical standards

IEEE Innovation/Standardization Platform



IEEE Standards Association (IEEE-SA)

Mission

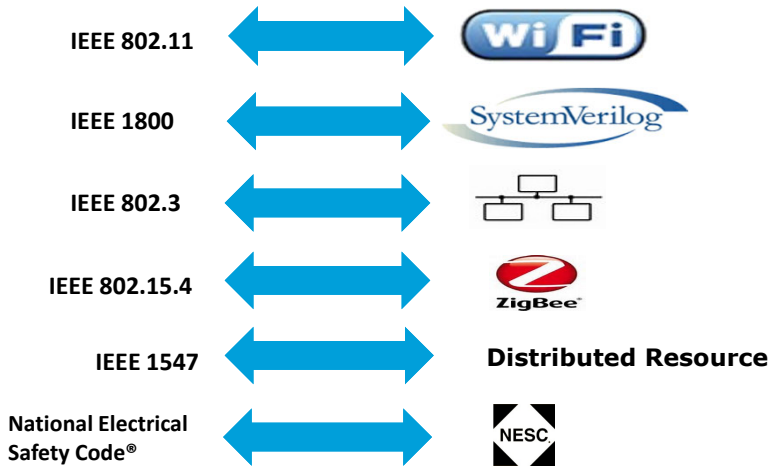
Enable and promote the collaborative application of technical knowledge to advance economic and social well-being through the development of technical standards and related activities

Vision

Be recognized as a preferred global provider of high-quality, market-relevant technology standards and of services that promote their universal adoption

IEEE Standards span a broad spectrum of technologies

- **Aerospace Electronics**
- **Broadband Over Power Lines**
- **Broadcast Technology**
- **Clean Technology**
- **Cognitive Radio**
- **Design Automation**
- **Electromagnetic Compatibility**
- **Green Technology**
- **Ethernet/Wi-Fi**
- **Medical Device Communications**
- **Nanotechnology**
- **Organic Components**
- **Portable Battery Technology**
- **Power Electronics**
- **Power & Energy**
- **Radiation/Nuclear**
- **Reliability**
- **Transportation Technology**

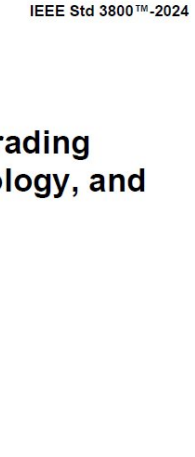


1,250+ Active standards (**139** approved in 2017)
650+ projects in progress (**198** initiated in 2017)
7,150+ IEEE-SA Individual Members
215 IEEE-SA Corporate Members
20,000+ participants

R6成果の詳細

【①国際標準化活動】

＊DTS参照モデル及び用語を定義するIEEE 3800-2024が2024/12に発行された。



IEEE Std 3800™-2024

IEEE Standard for a Data-Trading System: Overview, Terminology, and Reference Model

Developed by the

Digital Finance and Economy Standards Committee
of the
IEEE Consumer Technology Society

Approved 26 September 2024

IEEE SA Standards Board

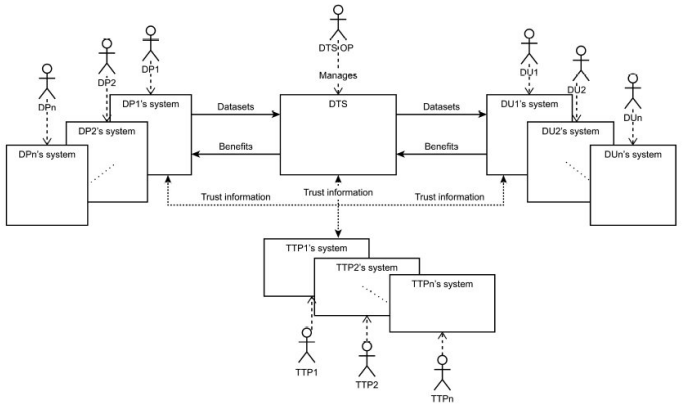
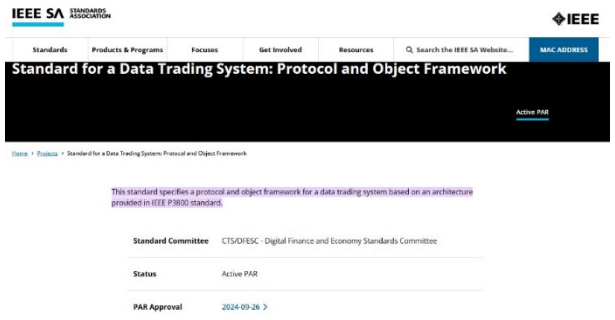


Figure 1—DTS reference model

＊DTSのオブジェクトフレームワークとプロトコルを規定するP3800.1 PARが承認、開発スタート



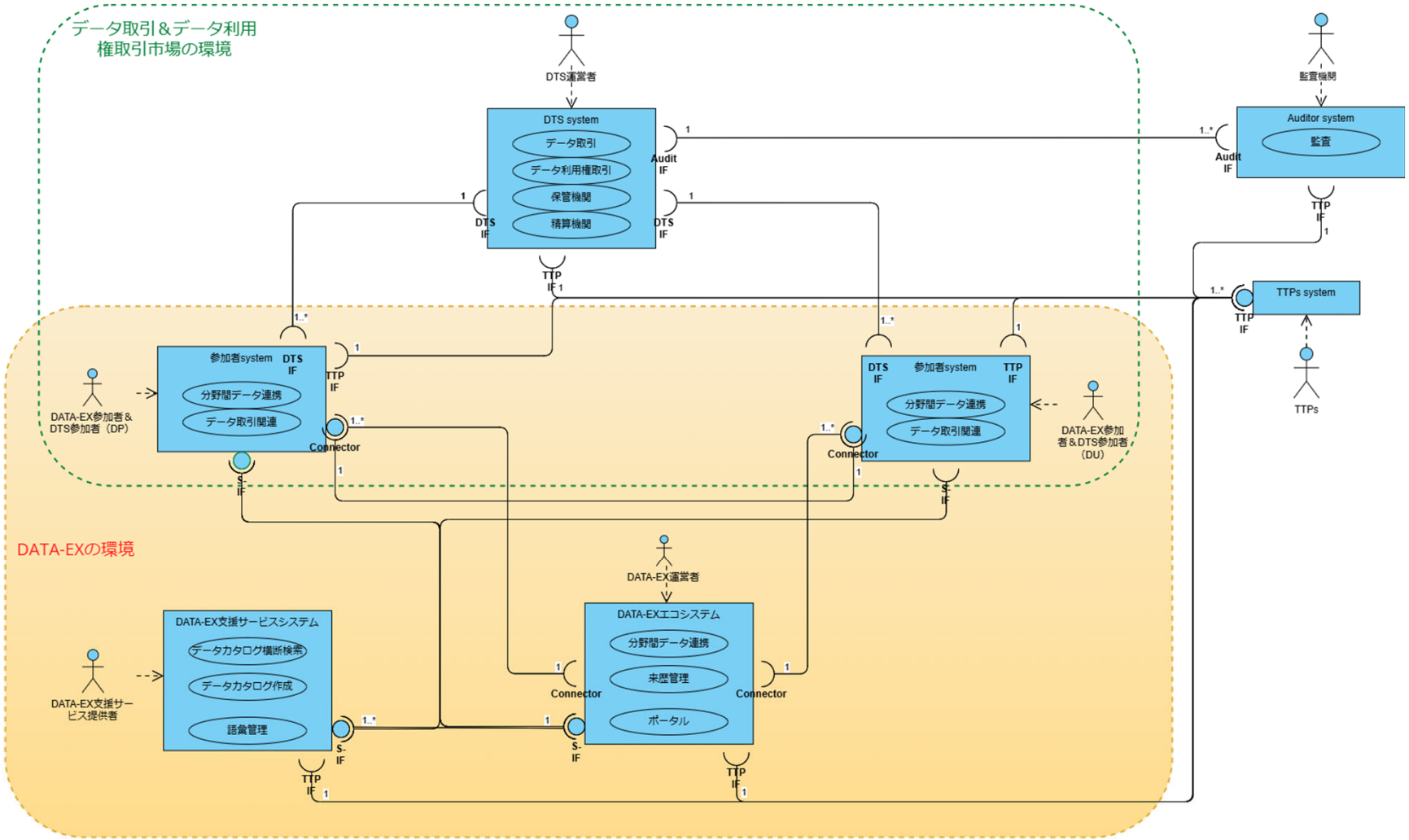
2.1 Project Title: Standard for a Data Trading System: Protocol and Object Framework データ取引システムの標準: プロトコルおよびオブジェクトフレームワーク
4.3 Projected Completion Date for Submittal to RevCom: Dec 2026
5.2 Scope of proposed standard: This standard specifies a protocol and object framework for a data trading system based on an architecture provided in IEEE P3800 standard.この標準は、IEEE P3800標準の社会実装を推進することを目的としています。
5.4 Purpose: This standard aims to advance the social implementation of the IEEE P3800 standard.
5.5 Need for the Project: To facilitate the adoption of IEEE P3800 standard, the specification of protocol and object framework for Data Trading System (DTS) is essential. This will facilitate consistent and efficient implementation of the specifications developed based on P3800 reference architecture, ensuring that DTSs are interoperable and meet regulatory requirements. IEEE P3800標準の採用を促進するためには、データ取引システム (DTS) のプロトコルおよびオブジェクトフレームワークの仕様が不可欠です。これにより、P3800の参照アーキテクチャに基づいて開発された仕様の一貫性と効率的な実装が可能となり、DTSが相互運用性を備え、規制要件を満たすことが確保されます。

R6成果の詳細

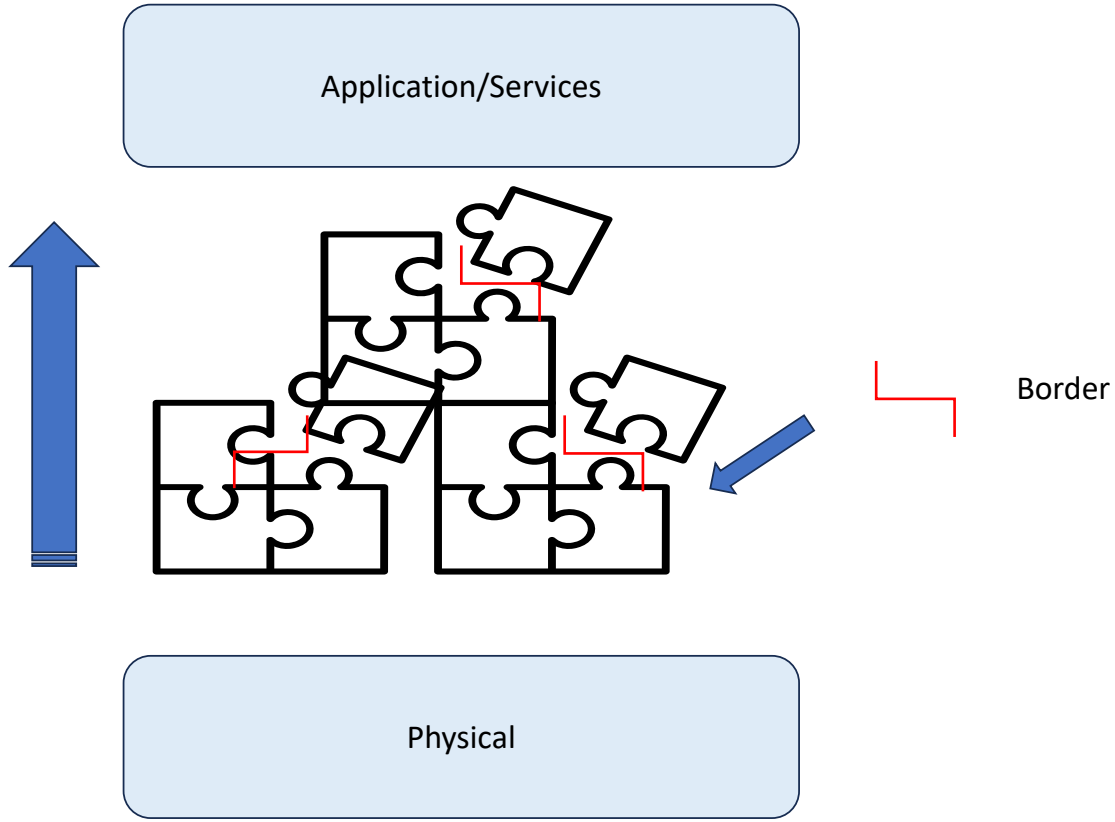
【②実証活動】

データ取引システム及びデータ利用権取引市場とDATA-EXを接続実証する環境を構築・運用した。DSA会員向けに説明会を実施し、実証実験の参加者を募集し、実施する（R6年度内）。

R6-R7年度の実現形態



The essential point of developing standard



- 1. Design the layered model
- 2. Specify the border to avoid layer violation

Principle of standard design

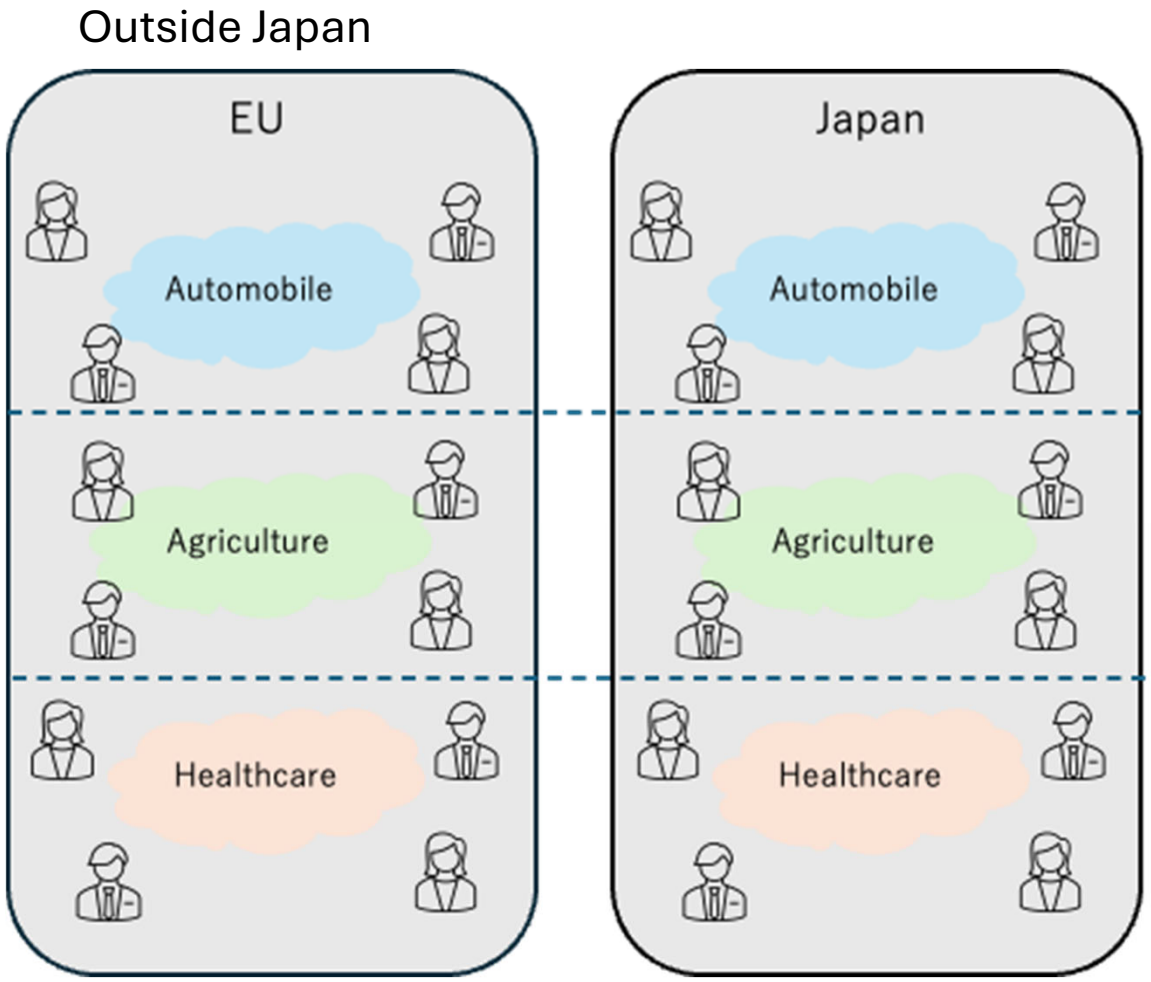
Discours de la méthode	Rules of Clarity Rules of Analysis Rules of Synthesis Rules of enumeration
Essential things for standard development	Clarify the scope of work to avoid layer violation Minimizing external dependencies to Increase availability

Assumption

Each region and country has its regulations and laws

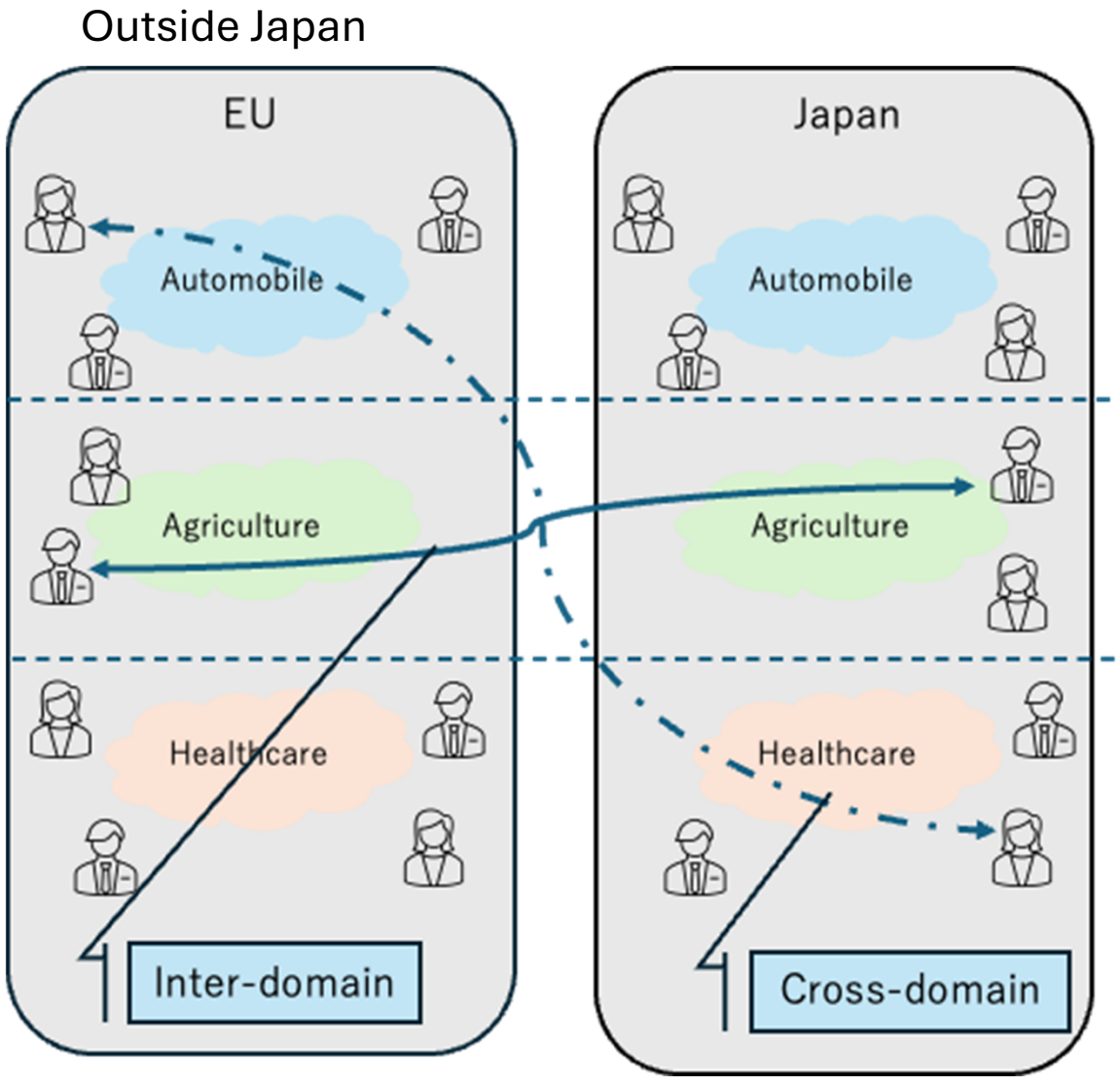
Each data space has its policies, scope, and control rules.

Data sovereignty is sovereign over individual participants in the data space.



Goal

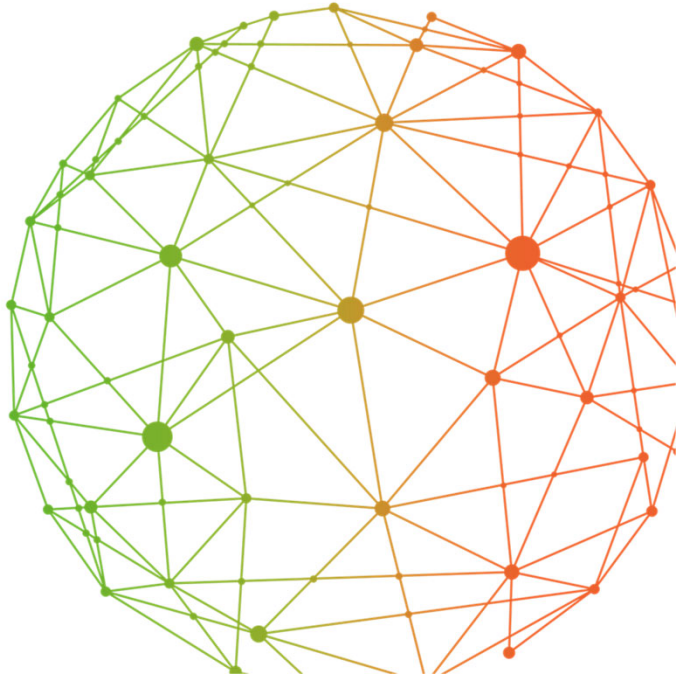
- Federation
  - Ensure participating organizations in different jurisdictions (EU and Japan) can discover, transfer, and receive data safely and securely across jurisdictions.
- Compliance
  - It is imperative that there be no violation of regulations in each participating organization's respective jurisdiction.
- Technology independence
  - Each participating institution's implementation techniques (e.g., connectors) should not constrain data set or usage.



Data Spaces Symposium

Spatial data: Embracing data spaces for enhanced data sharing and SDG progress

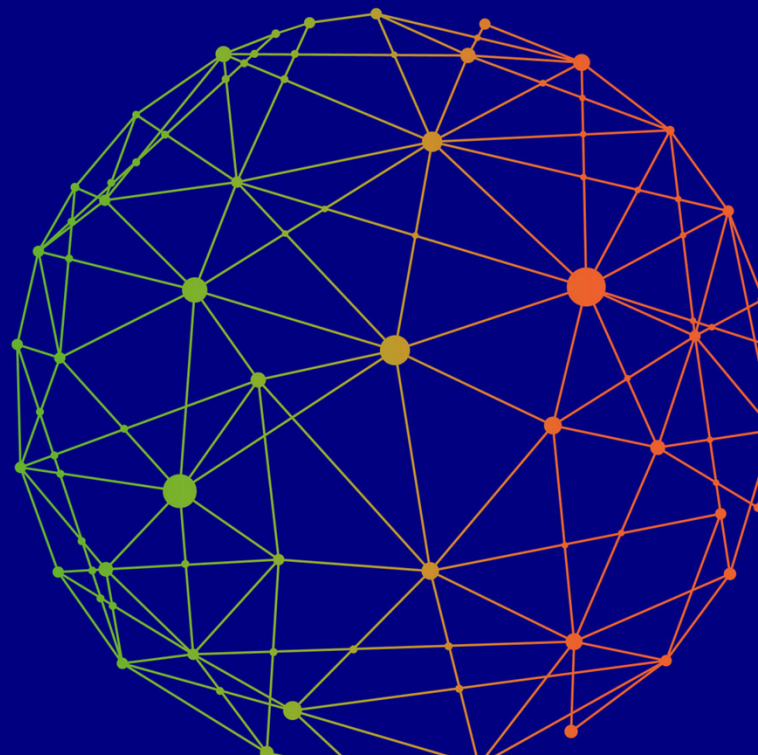
Ingo Simonis



Embracing data spaces for enhanced data sharing and SDG progress

Data Spaces Symposium 2025

Dr. Ingo Simonis, OGC

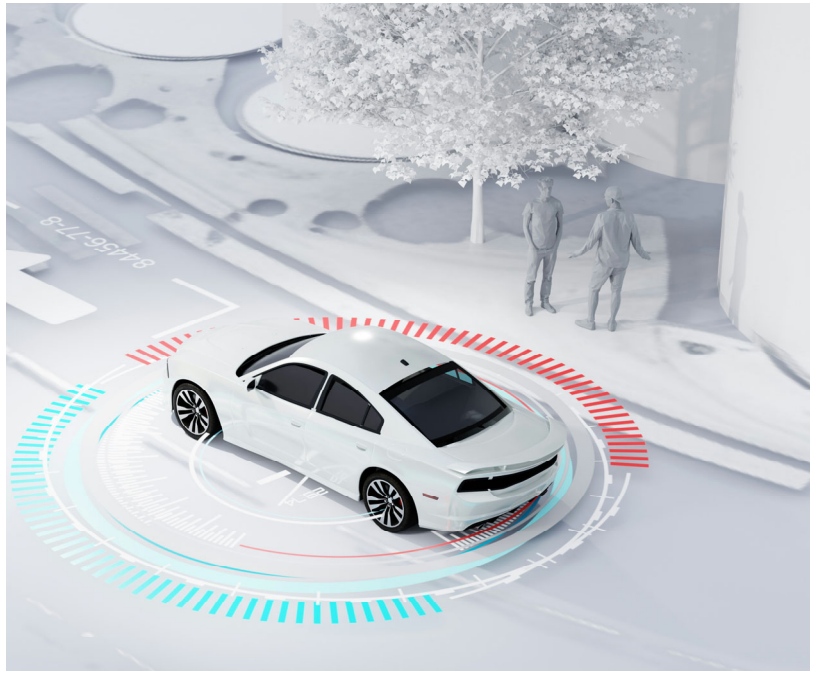


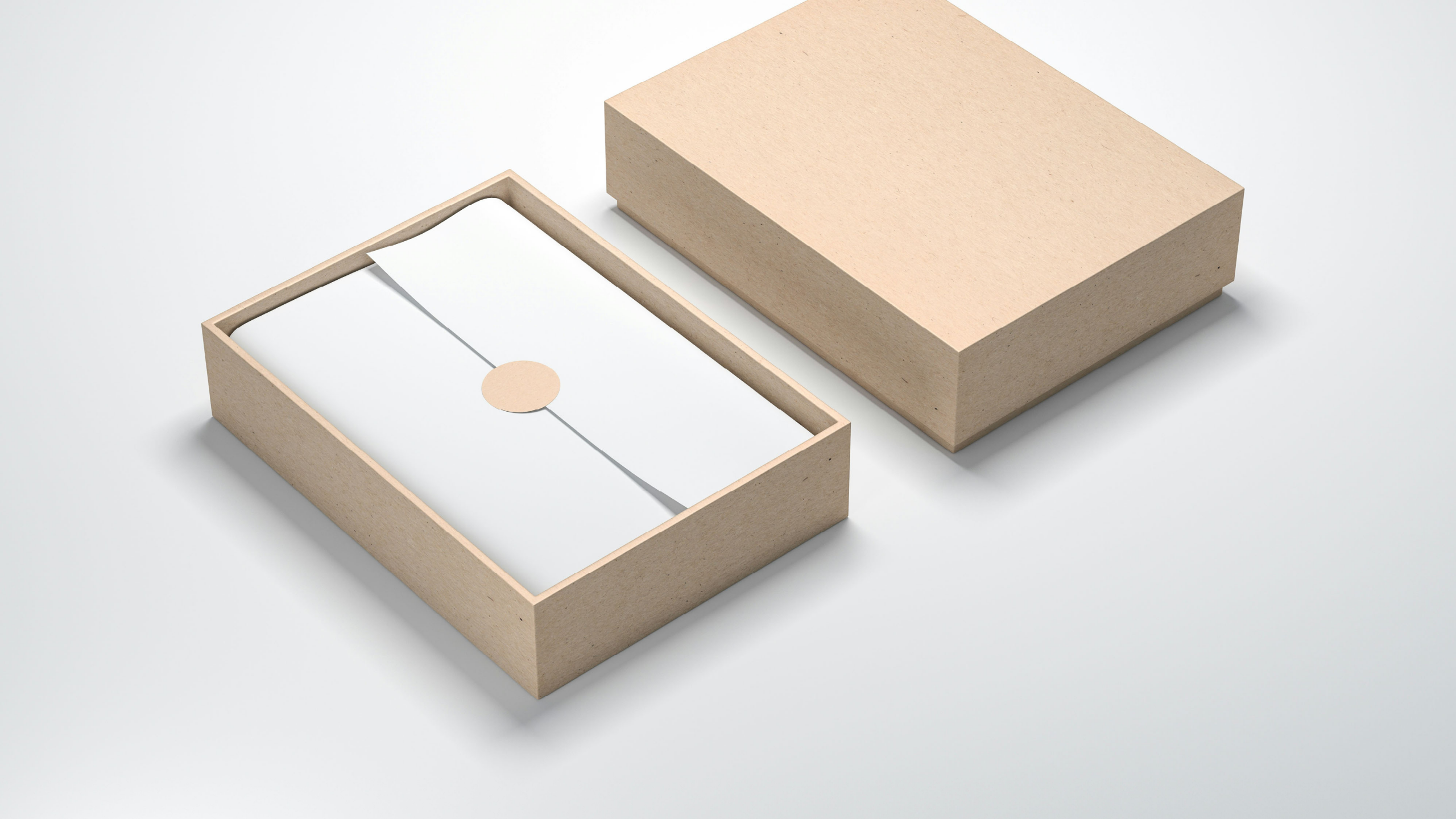
DSBA ■ BDV BIG DATA VALUE ASSOCIATION FIWARE FOUNDATION gaia-x INTERNATIONAL DATA SPACES ASSOCIATION

DATA SPACES SUPPORT CENTRE

Funded by the European Union

The Data Spaces Support Centre receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412






1M farms
1M farm owners

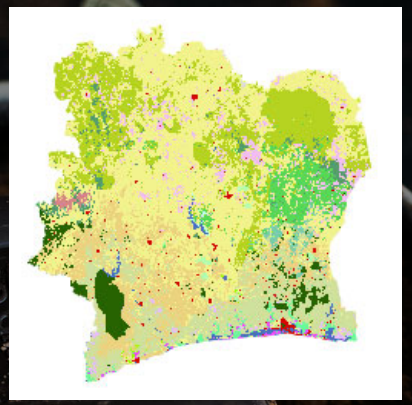
ID System

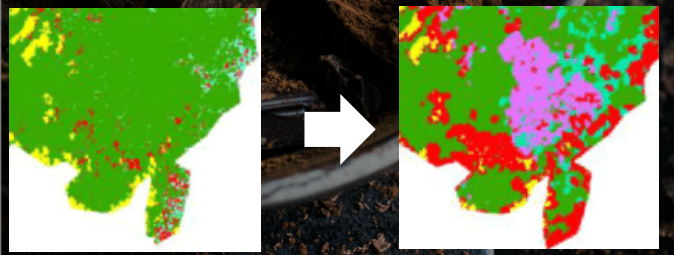
Farm locations

ID System

Farm locations

Land cover





Change detection

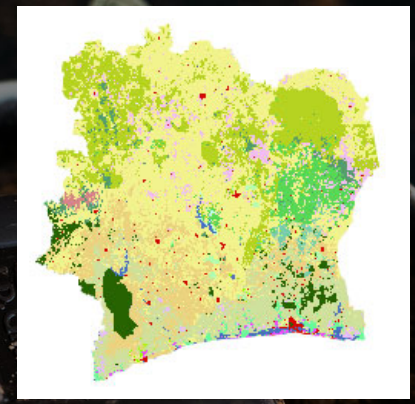
ID System

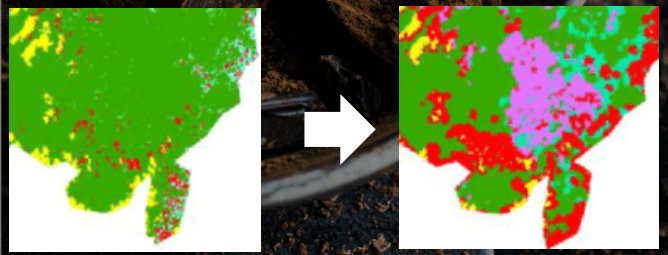
Payment system

Farm locations

Sustainable Development Goals

Land cover





Change detection

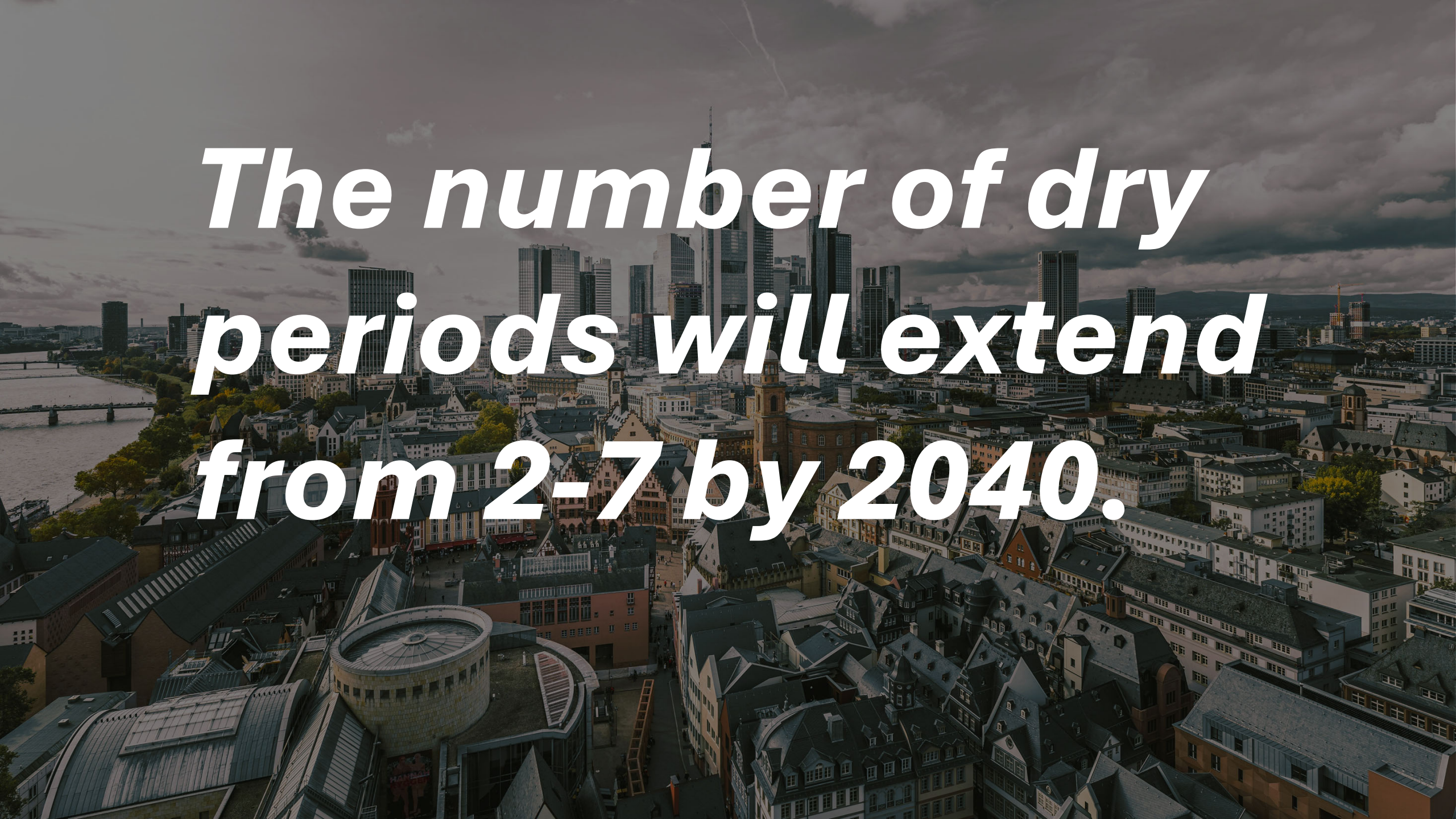
SDG 1: No Poverty – Cocoa farming is a major source of income for millions of smallholder farmers. However, many cocoa farmers live below the poverty line due to low prices and unfair trade practices.

SDG 2: Zero Hunger—Cocoa farming contributes to food security by providing farmers with income to buy food. However, monoculture cocoa plantations can threaten local food production and biodiversity.

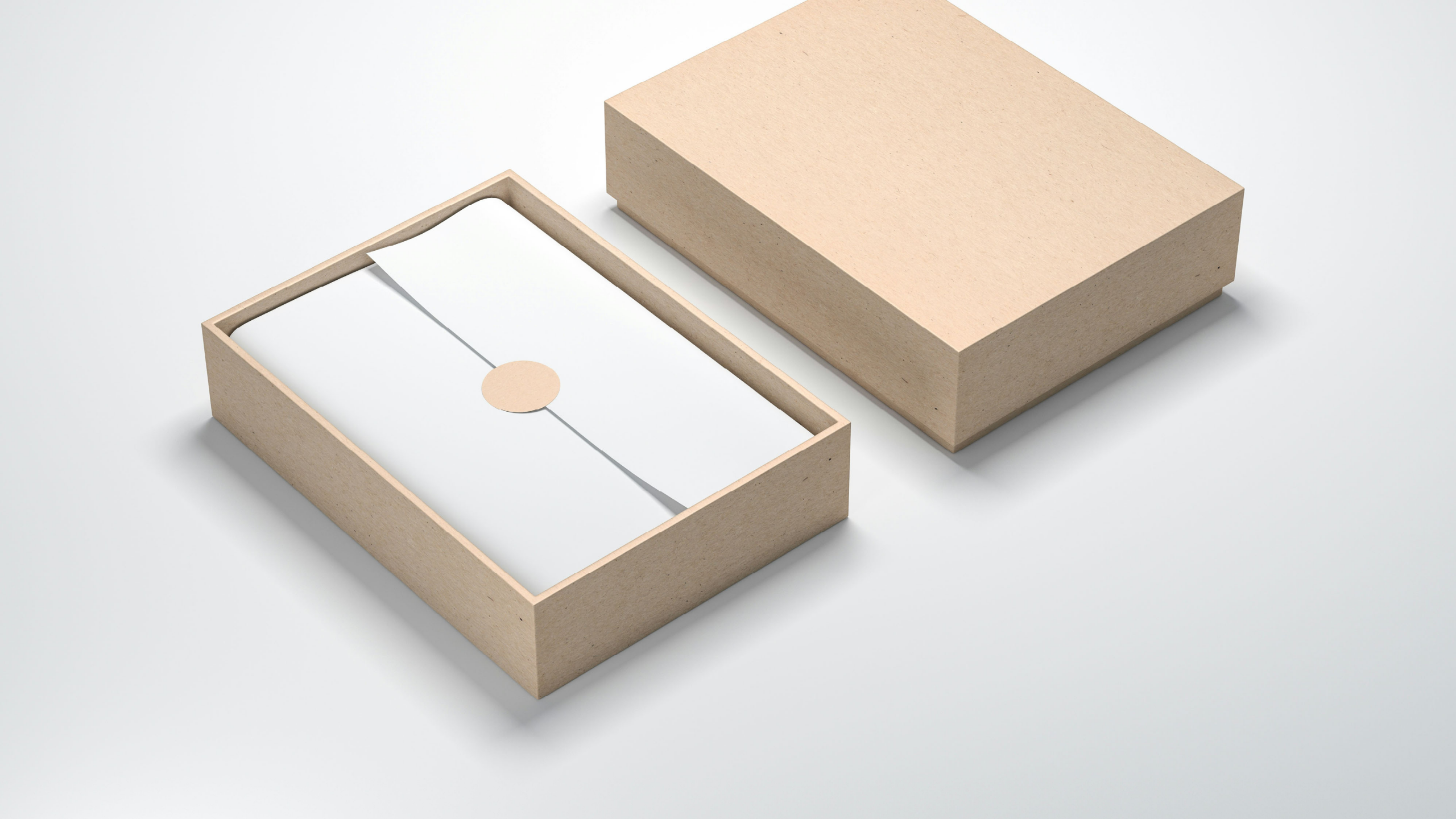
SDG 3: Good Health and Well-being – Child labor and poor working conditions in cocoa farming impact the well-being of workers

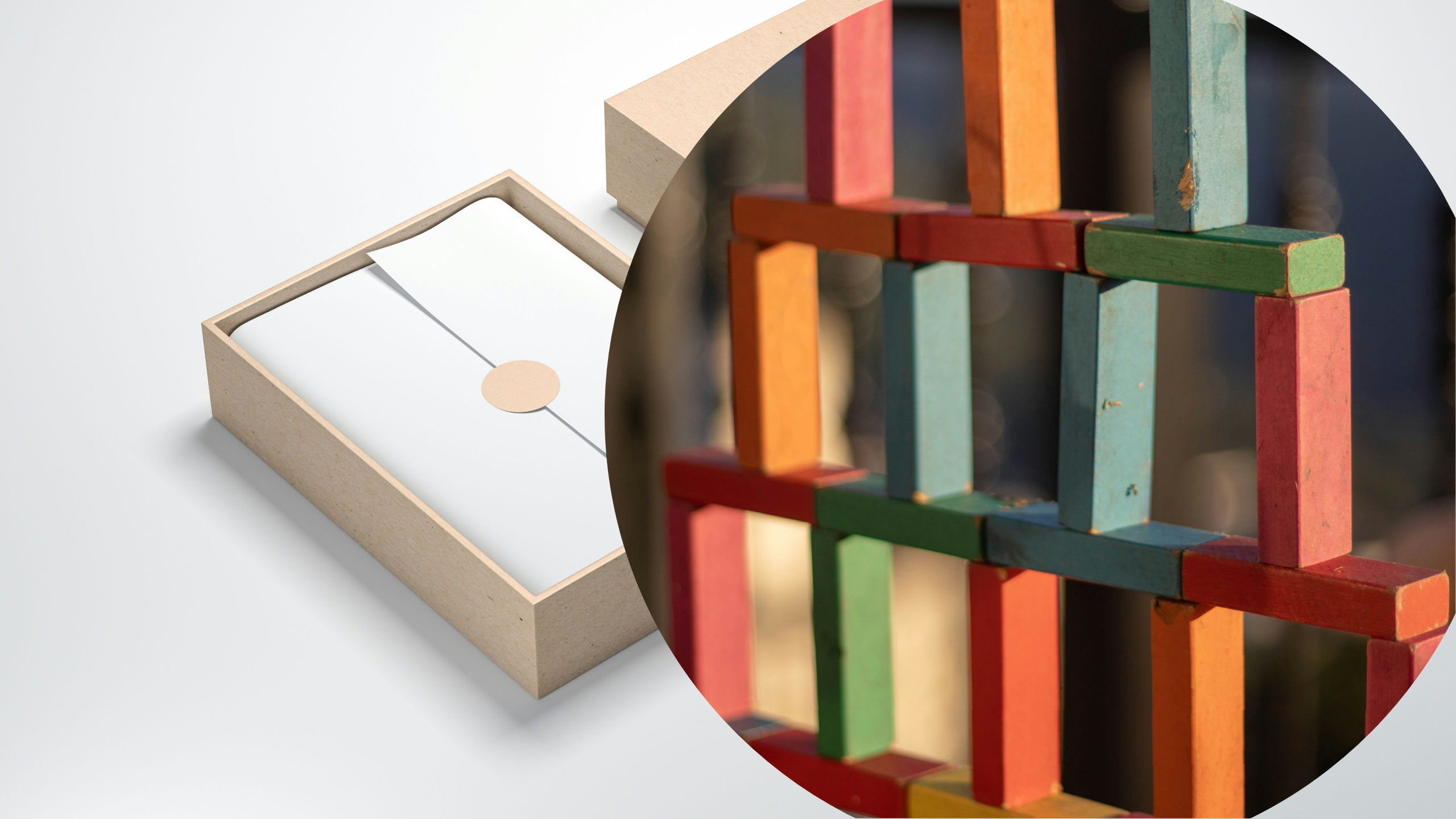
SDG 5: Gender Equality – Women play a crucial role in cocoa farming but often lack access to land ownership, financial resources, and decision-making power.

SDG 8: Decent Work and Economic Growth
SDG 10: Reduced Inequalities
SDG 12: Responsible Consumption and Production
SDG 13: Climate Action, SDG 15: Life on Land
SDG 17: Partnerships for the Goals

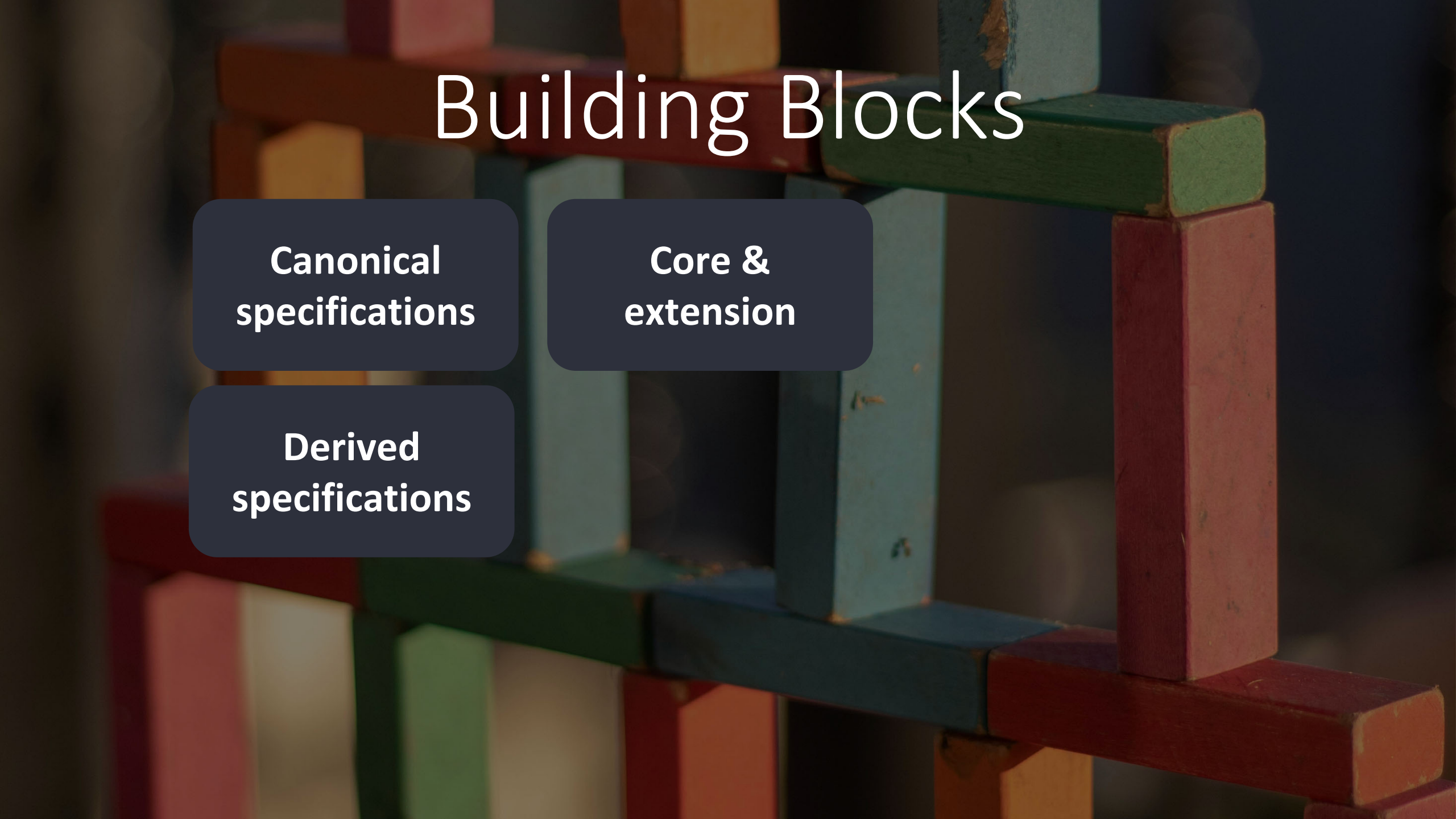

The number of dry
periods will extend
from 2-7 by 2040.

Office for Construction and Real Estate
Health Office
Office for Multicultural Affairs
Office for Road Construction and Development
Environmental Office
Housing Office
Building Inspection Office
Citizens' Office, Statistics and Elections
Main Office
Youth and Social Welfare Office
Treasury
Cultural Office
Public Order Office
School Office
Sports Office
City Planning Office
City Police
City Surveying Office
Frankfurt am Main Public Utilities Holding GmbH
Environmental Office
Frankfurt Economic Development GmbH





Building Blocks


Building Blocks
Canonical specifications
Core & extension
Derived specifications

Building Blocks

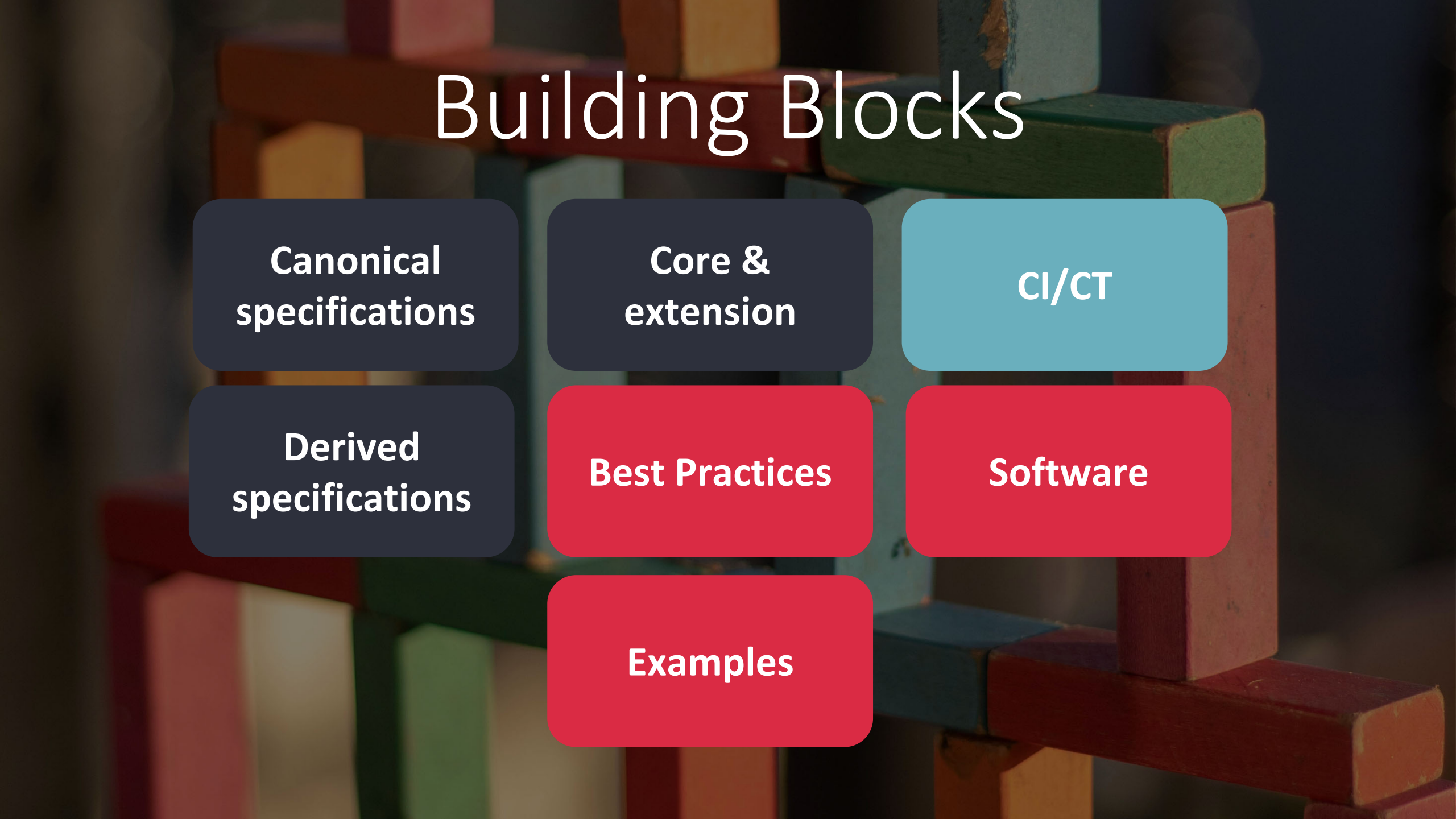
Canonical specifications

Core & extension

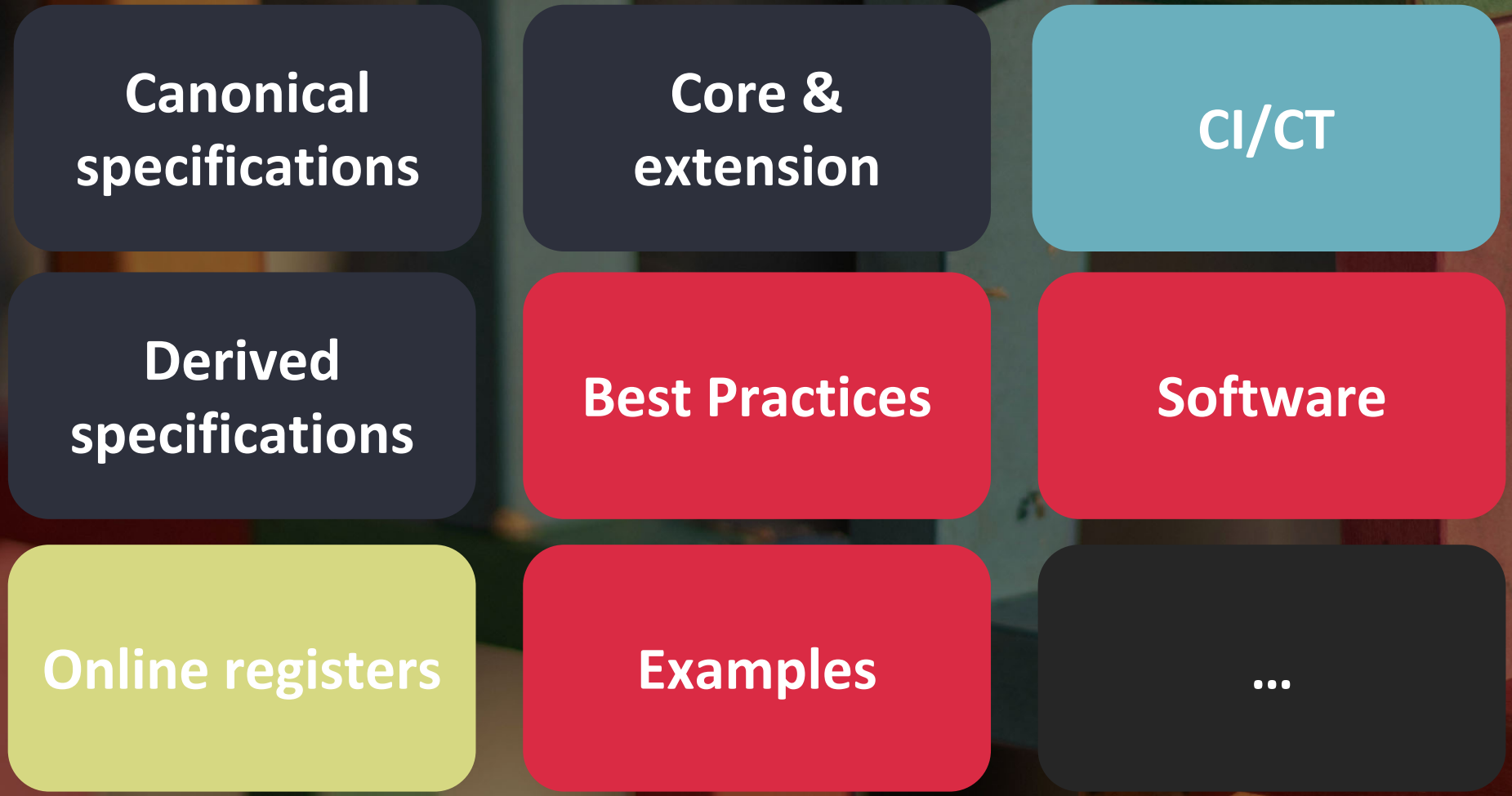
CI/CT

Derived specifications

Building Blocks

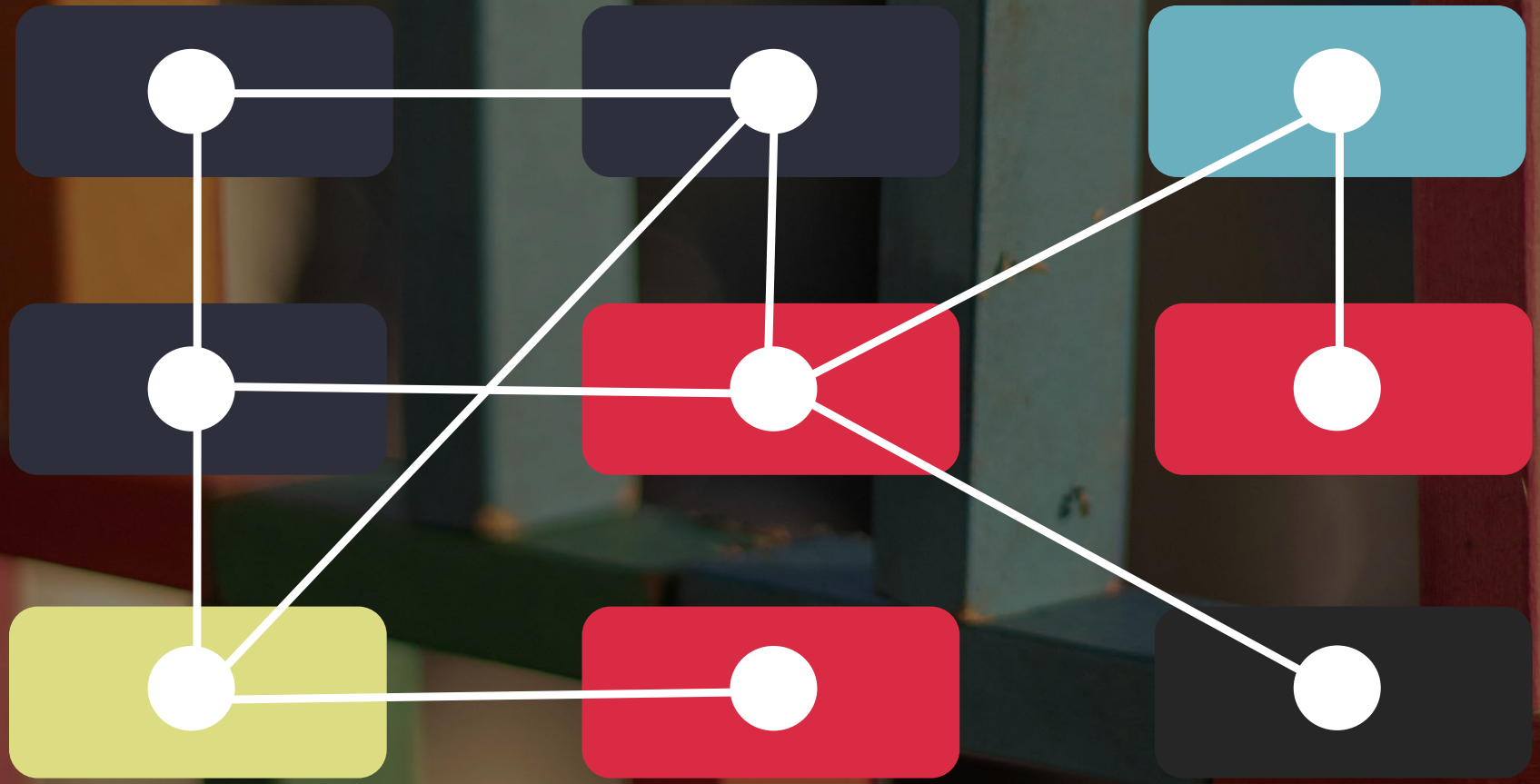


Building Blocks



How to glue it together into a whole?

Knowledge Graphs



Vocabularies

Payment systems

Encryption mechanisms

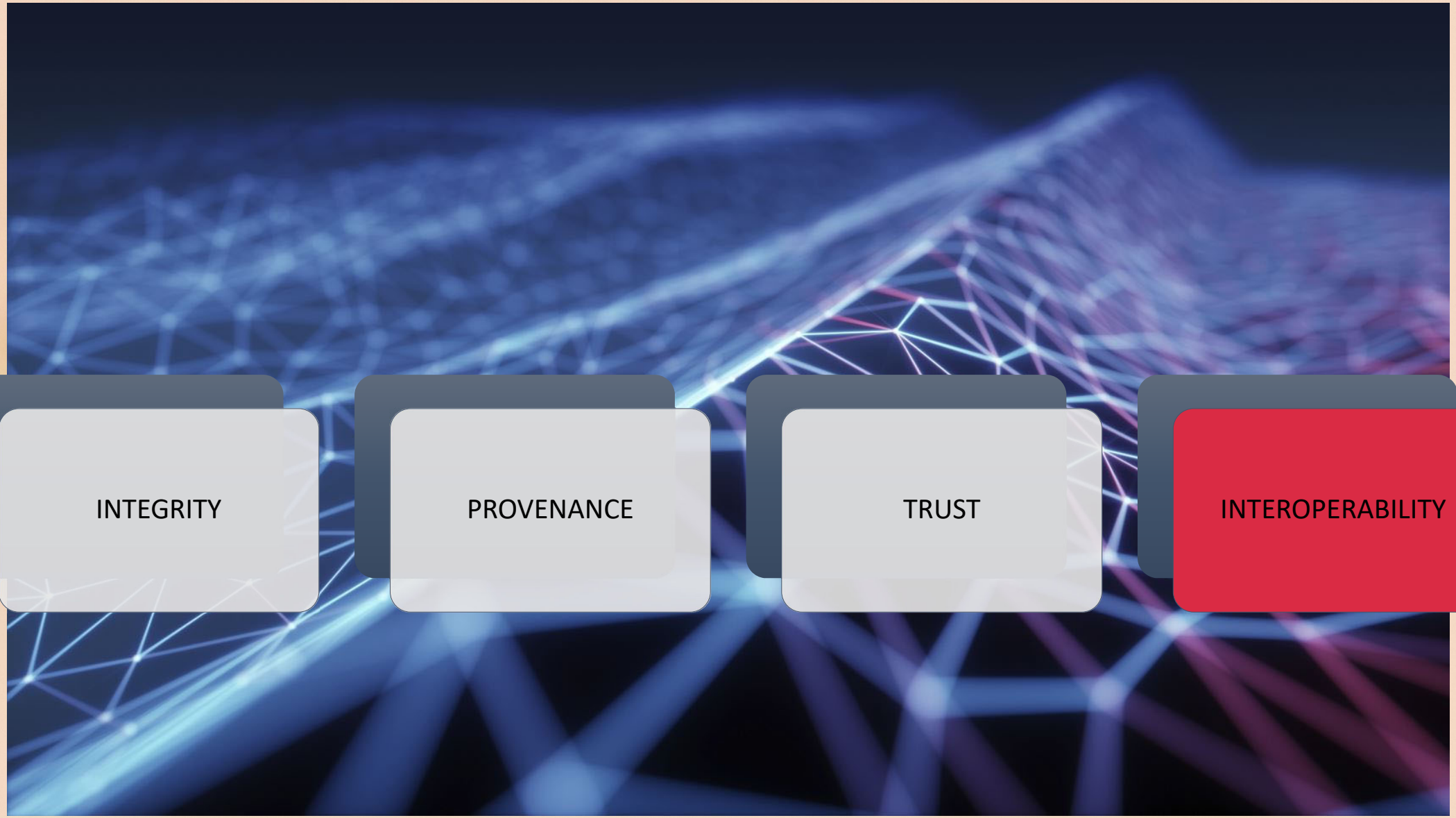
Software architectures

Authentication mechanisms

Workflows & analytics

Data

…

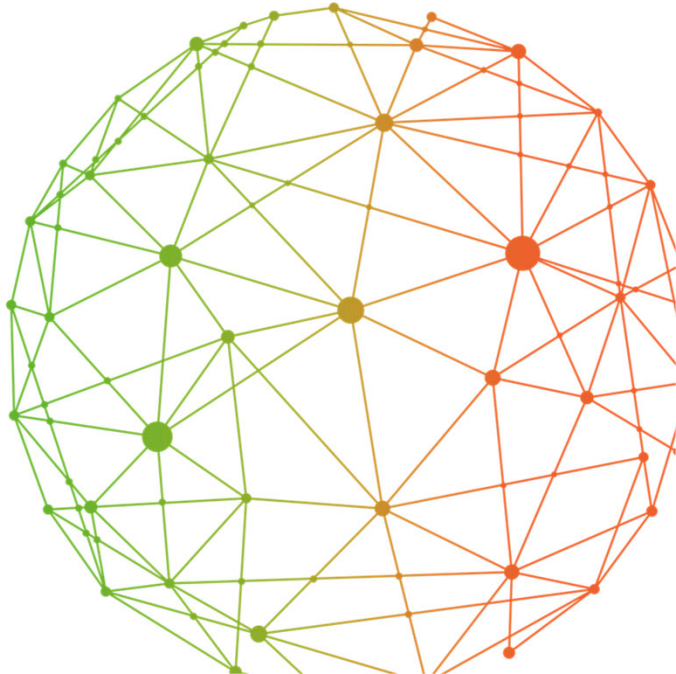

INTEGRITY
PROVENANCE
TRUST
INTEROPERABILITY


Open
Geospatial
Consortium
Enable everyone to work
together better

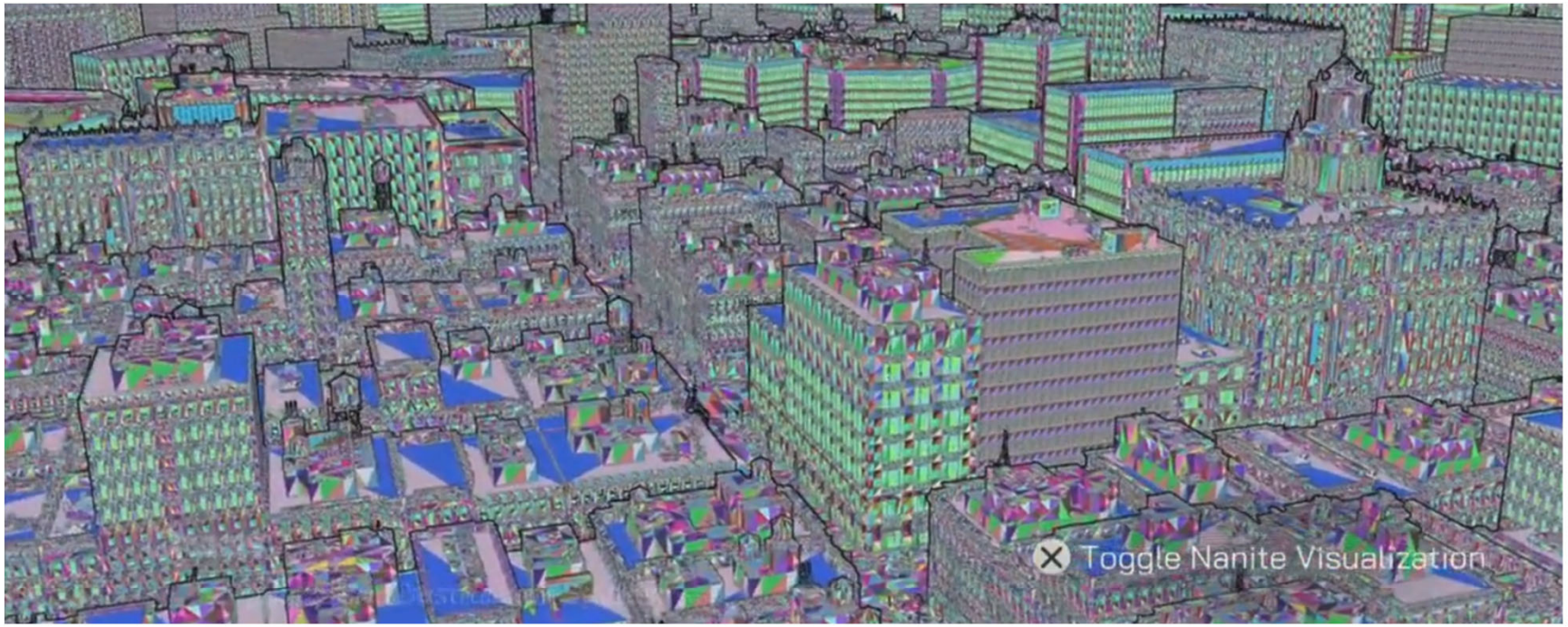
Data Spaces Symposium

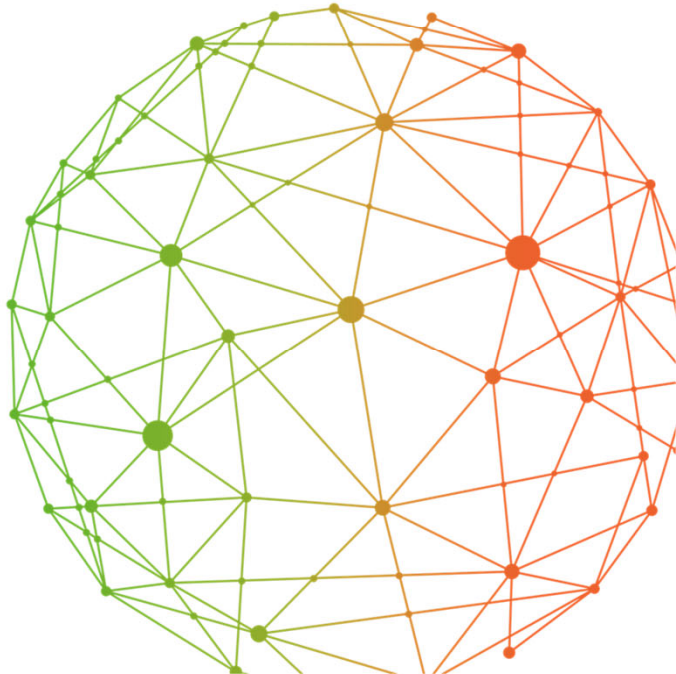
AI-powered data spaces in the Metaverse: For a greater societal impact

Joe Appleton



AI-powered data spaces in the Metaverse: For a greater societal impact

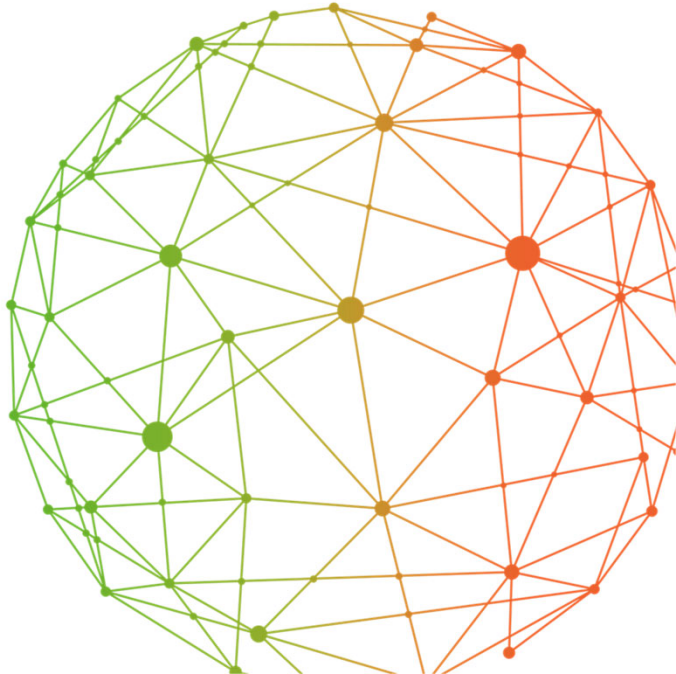




Data Spaces Symposium

Green x Digital Japan – solving ecological issues at large scale through data spaces

Tomoko Konishi-Nagano



Green x Digital Japan

- solving ecological issues at large scale through data spaces

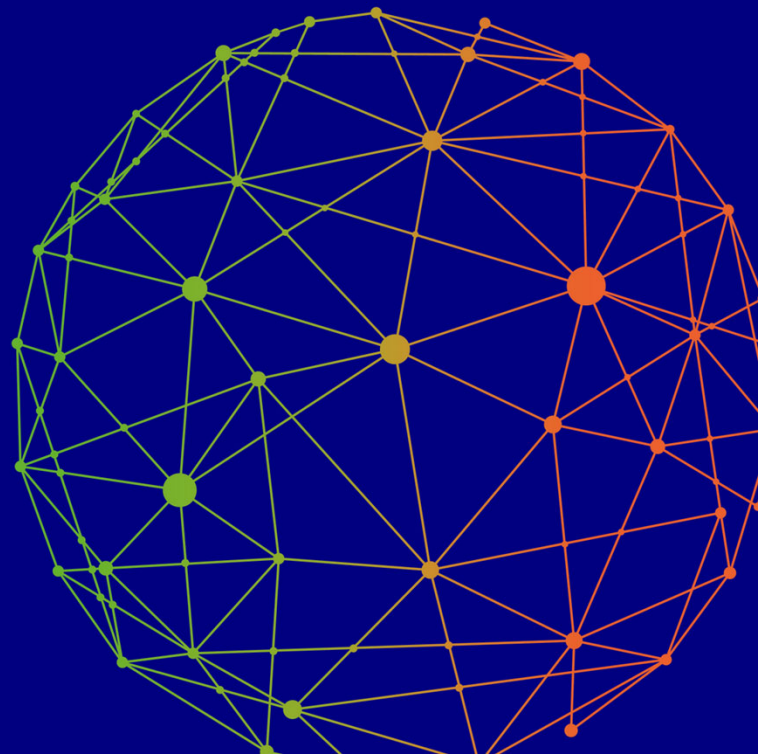
Data Spaces Symposium 2025

Ph.D. in Environmental Science

Tomoko KONISHI-NAGANO

Visualization WG, Green x Digital Consortium

Manager, Strategic Planning Unit, Fujitsu Limited



DSBA ■ BDV BIG DATA VALUE ASSOCIATION FIWARE FOUNDATION gaia-x INTERNATIONAL DATA SPACES ASSOCIATION

DATA SPACES SUPPORT CENTRE

Funded by the European Union

The Data Spaces Support Centre receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412

Green x Digital Consortium

works to digitize environment-related fields and create new business models so as to optimize Japanese industry and society as a whole toward the realization of carbon neutrality by 2050.

Chair: Dr. Noboru Koshizuka

(Professor, Interfaculty Initiative in Information Studies, The University of Tokyo)

Auditor: Mr. Hisashi Noda(Seiko Epson Corporation)

Regular Members **144**

Supporting Members **6**

Value creation

Business infrastructure development

Initiatives toward cross-industry and global optimization

Green x Digital Consortium Organizational Structure

Green x Digital Consortium

General meeting

Role

- ✓ Deliberations on business plans, income and expenditure budgets, etc.
- ✓ Appointment of Chairperson and Auditors
- ✓ Election of active members to constitute the Steering Committee

Steering committee

Role

- ✓ Formulation of business plan and budget proposal, revision of operating rules, etc.
- ✓ Discussion of activity policy (mid to long term vision)
- ✓ Deliberation on establishment and consolidation of new WGs / Discussion on overall measures to promote the merits of this initiative

Visualization WG

Study to visualize CO_2 emissions throughout the supply chain

Lead: NEC Corporation
Sub-Leader:
Mizuho Research & Technology,
Fujitsu

DC Decarbonization WG
(Digital Rural City Commercialization)

Building a business model for data center business to support the Digital Rural City concept

Lead: Fuji Electric Co.

Environmental Activity Data Valorization WG

Examination of common issues in IT systems for measuring, evaluating, and managing performance data of environmental activities by companies

Lead: Ricoh *New WG

*Launching WGs and projects is considered as needed in response to requests from member companies.

Observers: relevant ministries, local governments, research institutions, etc.

Secretariat: Japan Electronics and Information Technology Industries Association (JEITA)

Visualization WG Member

Green x Digital Consortium

■ Lead: NEC ■ Deputy Leads: Mizuho Research & Technologies, Fujitsu

(as of September 5, 2024)

■ Member:

- IHI
- Aisin
- Idea
- Asahi Kasei
- asphalt-energy
- ASKUL
- Azbil
- Added
- Anaplan Japan
- ABeam Consulting
- Amazon Web Services Japan
- Alps Alpine
- e-dash
- Ernst & Young ShinNihon LLC
- ignition point
- ITOCHU ENEX CO.
- ITOCHU Techno-Solutions Co.
- Marubeni-Itochu Steel Inc.
- Iwatani Corporation
- INTEC
- Wing Arc 1st
- woofle
- SCSK
- SBI R3 Japan
- NTT Anode Energy
- NTT Communications
- NTT DATA Group
- F.C.C.
- Oki Electric Industry Co.
- Omron Corporation
- Kajima Construction
- Kawasaki Heavy Industries
- Kansai Electric Power Co.
- Canon.
- KYOCERA Document Solutions
- Google
- Claudio.
- class technology
- Global Partners Technology
- Golem
- CollaboGate Japan
- Sustech
- Sato Holdings Co.
- JSOL
- Sharp
- The Shoko Chukin Bank
- Scalar
- Suzuyo & Co., Ltd.
- Suzuso Shoji
- Sumitomo Chemical
- Sumitomo Electric Industries
- Seiko Epson
- Salesforce Japan
- Saison Information Systems
- zero-plus
- zero board
- both days
- Sony Group
- SoftBank
- Daikin Industries
- DNP
- TANAKA Holdings Co.
- Tansoman GX
- Chaintope
- Chubu Electric Power Company Milize
- TIS
- DNV Business Assurance Japan
- digital grid
- Deloitte Tohmatsu Consulting Co.
- DENKA
- Denso
- Dentsu Group
- Tokai Electronics Co.
- DataGateway
- Tokyo Ohka Kogyo Co.
- Tokio Marine & Nichido Fire Insurance
- Tokyo Electric Power Holdings, Inc.
- Toshiba Corporation
- Oriental spinning
- TOKIUM
- Tokuyama
- TOPPAN Edge
- Toyota Systems
- Toyota Tsusho Corporation
- transcosmos inc.
- Nagase & Co.
- Nikon
- Nitto Denko
- IBM Japan, Ltd.
- NGK Insulators, Ltd.
- Nippon Information and Communication
- NEC
- Nihon Dempa Kogyo Co.
- Nuvoton Technology Japan
- Net One Systems
- Nomi Bosai
- Nomura Research Institute, Ltd.
- PERSOL Business Process Design
- Panasonic Holdings Co.
- PID
- Hitachi, Ltd.
- Hitachi Solutions, Ltd.
- BIPROGY
- booost technologies
- Foval
- Fujitsu
- Fuji Electric Co.
- FUJIFILM Corporation
- Fujifilm Business Innovation
- Brother Industries
- bay current
- Honda Motor Co.
- McNica.
- Mizuho Research & Technologies
- Mitsui Chemicals
- Sumitomo Mitsui Banking Co.
- Mitsui Warehouse Holdings, Inc.
- Mitsui & Co.
- Mitsubishi Warehouse Co.
- Mitsubishi Electric
- Bank of Mitsubishi UFJ, Ltd.
- Murata Manufacturing Co.
- Yamato Transport
- Unicharm
- Yokogawa Electric
- Ricoh
- Ridgelinez
- Loam
- Logisteemed

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■ **Observers:**
GX Promotion Planning Office, Environmental Policy Division, Industrial Science and Technology Policy and Environment Bureau, Ministry of Economy, Trade and Industry; General Affairs Division, Manufacturing Industries Bureau; Trade Strategy Office, Trade Policy Bureau Secretariat of Digital Market Competition Headquarters, Cabinet Secretariat; Office for Promotion of De-Carbon Business, Global Warming Countermeasures Division, Global Environment Bureau, Ministry of the Environment; Earth Policy Office, Ministry of Agriculture, Forestry and Fisheries Japan Electrical Manufacturers' Association (JEMA)

Secretariat: Japan Electronics and Information Technology Industries Association (JEITA)

SBT (Science Based Targets) ※Participating Companies Increase Worldwide

With targets consistent with the levels required by the Paris Agreement, companies promoting CO_2 emission reductions are rapidly increasing around the world.

※SBT: It encourages companies to set GHG emission reduction targets consistent with science-based evidence to the level required by the Paris Agreement, validating targets that comply with criteria including indirect emissions not only within the company but also in the supply chain.

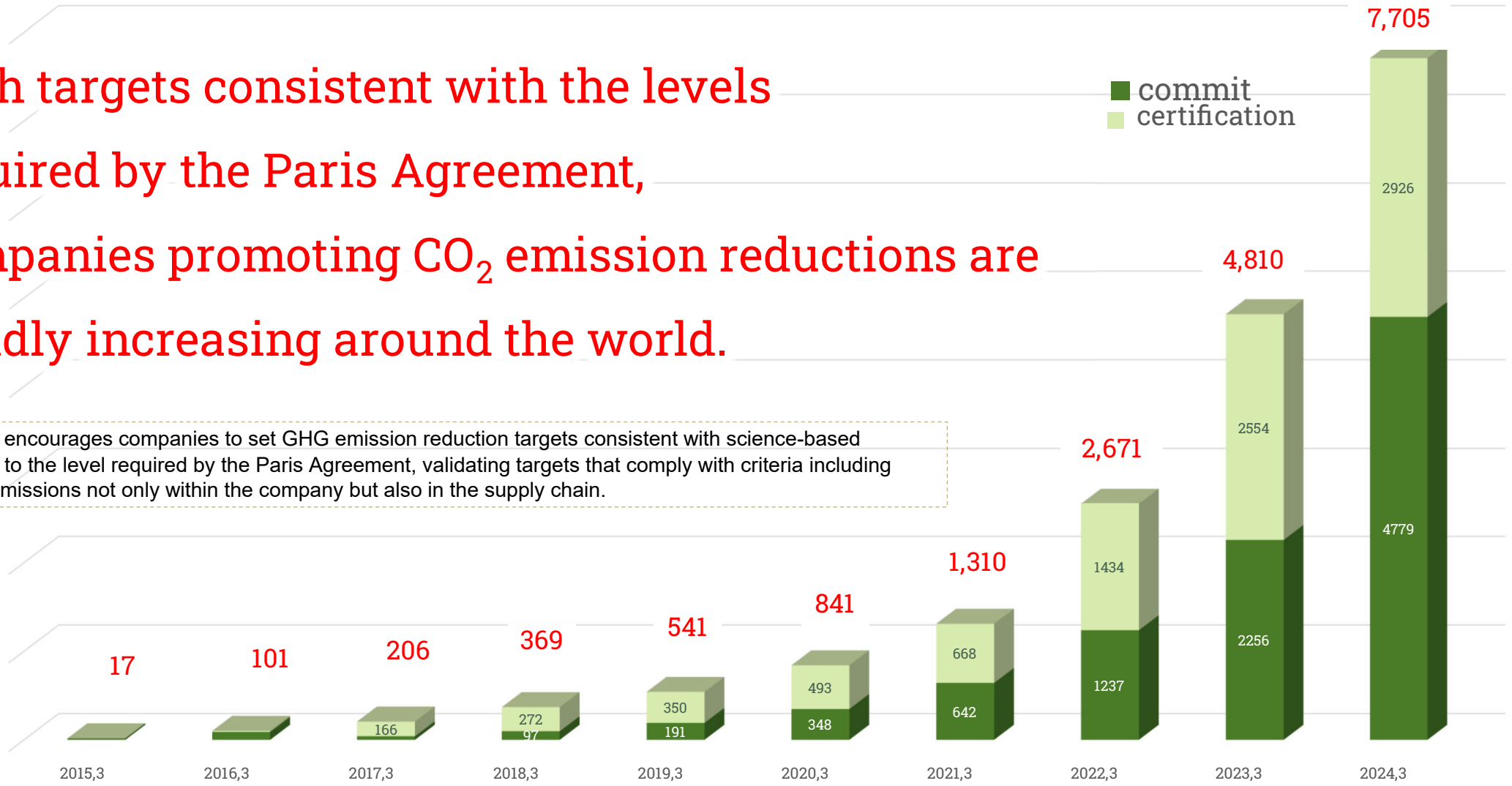


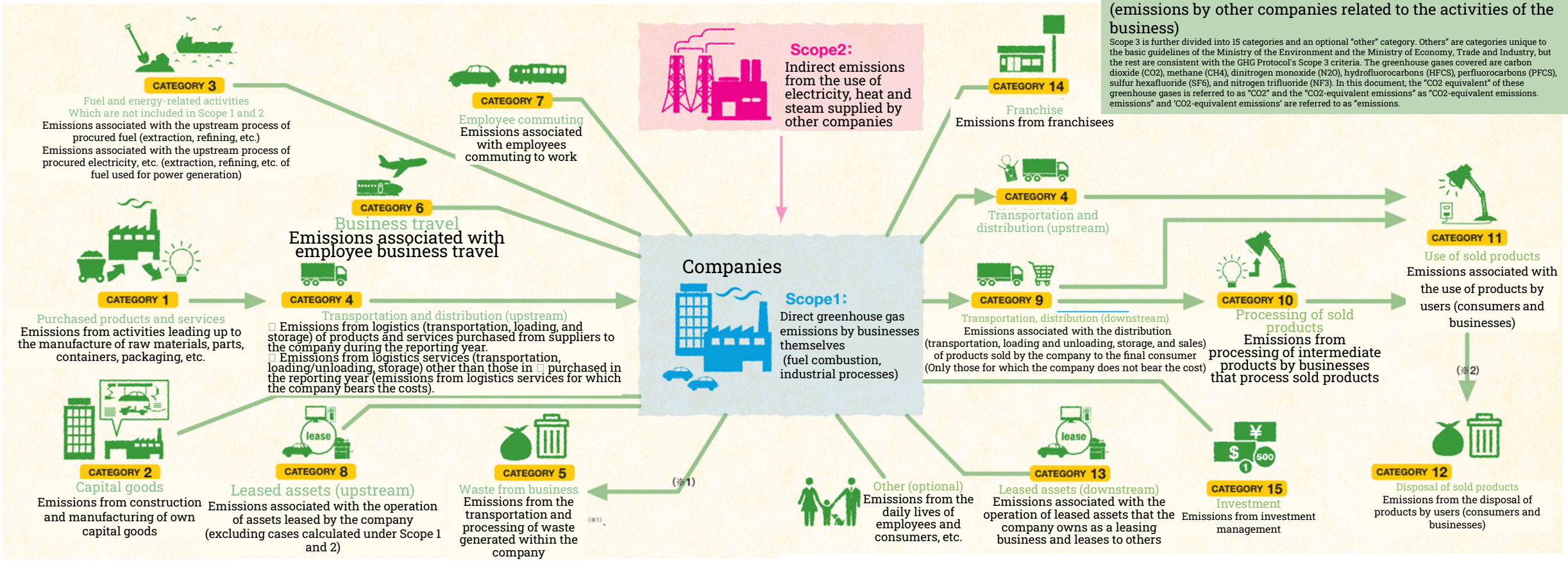
Fig. Number of companies certified and committed to SBT

Source: Science Based Targets website

Supply Chain CO_2 Emissions (Scope 1,2,3)

Scope 3: Indirect emissions other than Scope 1 and Scope 2 (emissions by other companies related to the activities of the business)

Scope 3 is further divided into 15 categories and an optional "other" category. Others" are categories unique to the basic guidelines of the Ministry of the Environment and the Ministry of Economy, Trade and Industry, but the rest are consistent with the GHG Protocol's Scope 3 criteria. The greenhouse gases covered are carbon dioxide (CO2), methane (CH4), dinitrogen monoxide (N2O), hydrofluorocarbons (HFCS), perfluorocarbons (PFCS), sulfur hexafluoride (SF6), and nitrogen trifluoride (NF3). In this document, the "CO2 equivalent" of these greenhouse gases is referred to as "CO2" and the "CO2-equivalent emissions" as "CO2-equivalent emissions. emissions" and 'CO2-equivalent emissions' are referred to as "emissions.



CO_2 emission reductions target the entire supply chain

Source: Ministry of the Environment, Japan, Concept of Calculating Supply Chain Emissions

Supply Chain CO_2 Emissions (Scope 1,2,3)

Green x Digital Consortium

Scope 3: Indirect emissions other than Scope 1 and Scope 2 (emissions by other companies related to the activities of the business)

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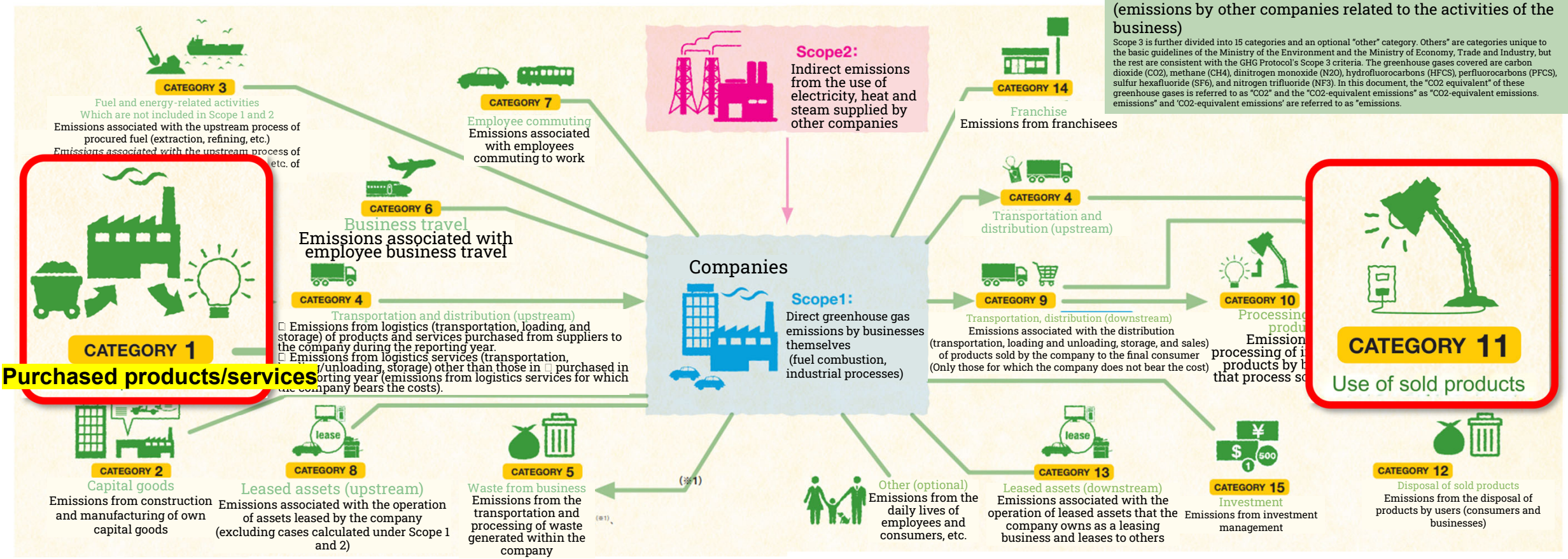


CO_2 emission reductions target the entire supply chain

Source: Ministry of the Environment, Japan, Concept of Calculating Supply Chain Emissions

Issues in Calculating Supply Chain CO_2 Emissions

Green x Digital Consortium

- Scope 3 Category 1 calculation method used by many companies;

Activity level	×	Secondary data emission intensity
Cost and weight per type of products and services purchased		Industry average cited from databases, etc.

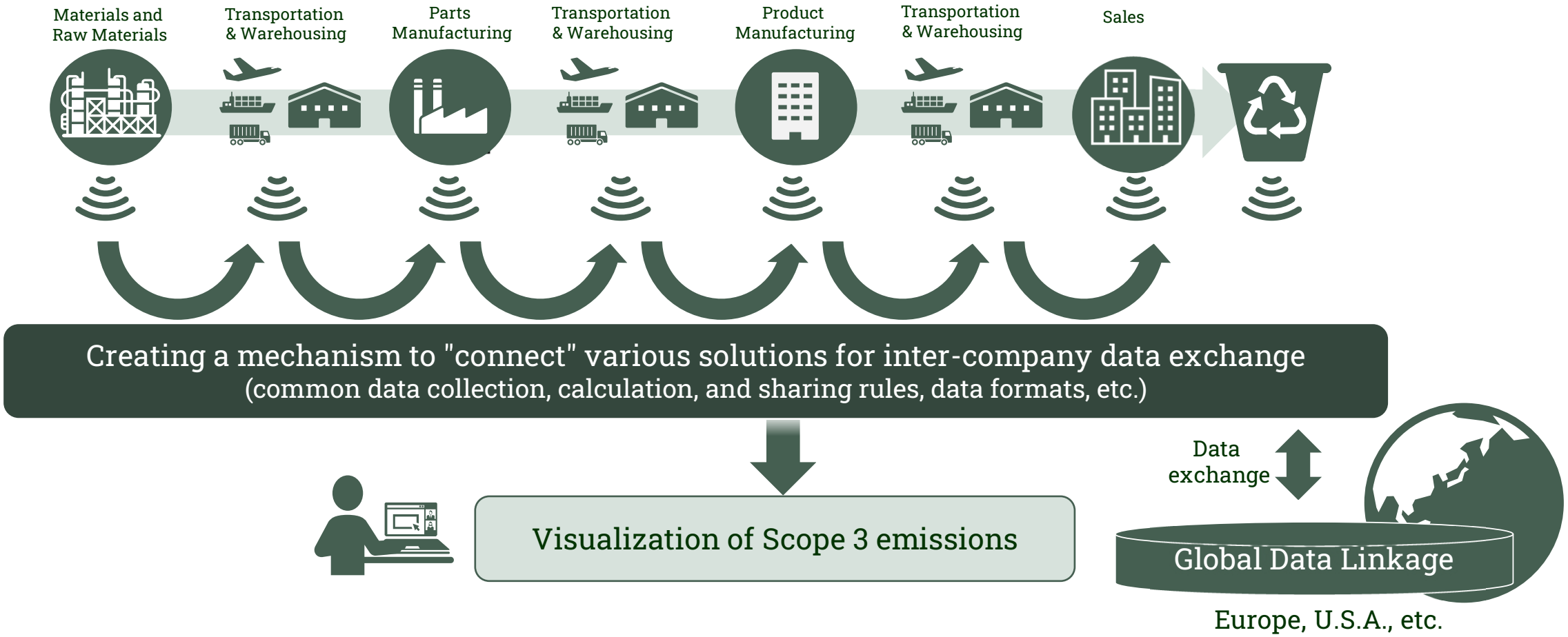
The amount of activity must be reduced to zero to reduce emissions.

- Scope 3 calculation method in the era of carbon neutralization;

Activity level	×	Primary data emission intensity
Cost and weight per type of products and services purchased		Company-specific CO2 data reflecting reduction efforts by supplier companies

Suppliers' emission reduction efforts can be reflected.

Purpose and Goals of the Visualization WG

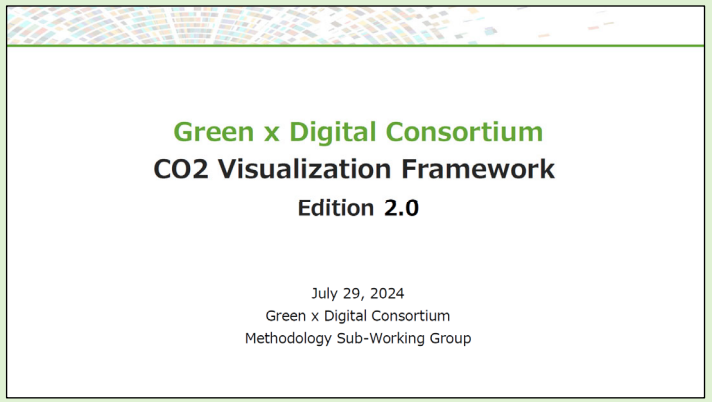


Leveraging digital technology to link primary data across the supply chain

Purpose and Goals of the Visualization WG

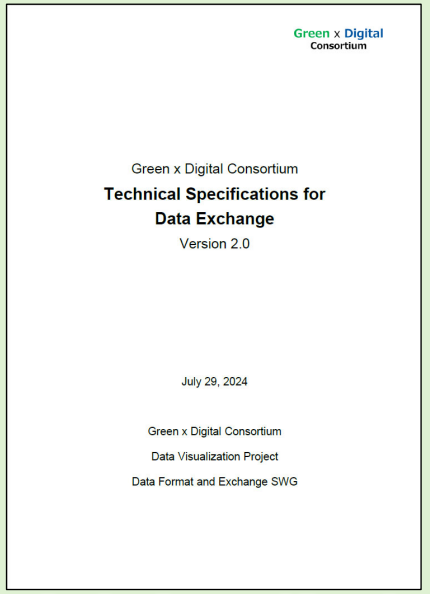
Green x Digital Consortium

Methodology Sub-Working Group


Green x Digital Consortium
CO2 Visualization Framework
Edition 2.0
July 29, 2024
Green x Digital Consortium
Methodology Sub-Working Group

"CO_2 Visualization Framework"

Data Visualization Project Data Format and Exchange SWG


Green x Digital Consortium
Green x Digital Consortium
Technical Specifications for Data Exchange
Version 2.0
July 29, 2024
Green x Digital Consortium
Data Visualization Project
Data Format and Exchange SWG

" Technical Specifications for Data Exchange"

Leveraging digital technology to link primary data across the supply chain

WBCSD PACT (Partnership for Carbon Transparency) from 2021.06

https://www.carbon-transparency.com/

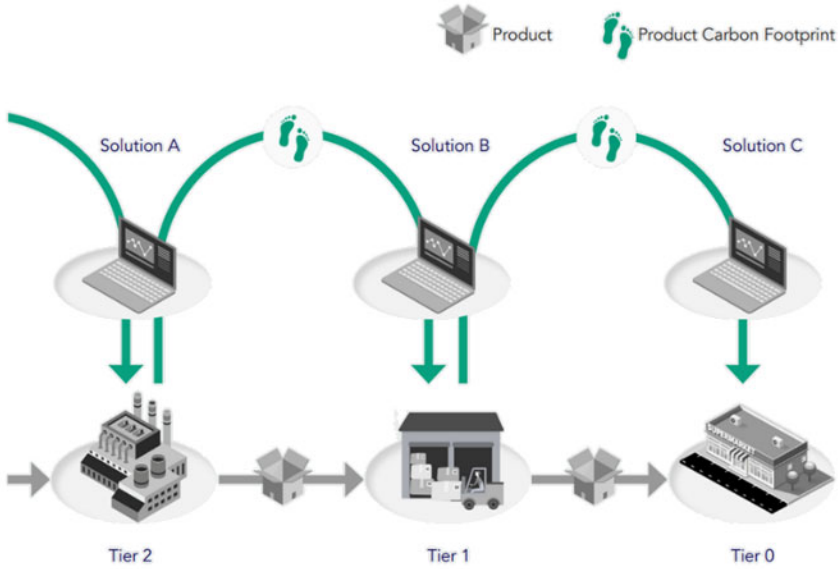
- An initiative launched by WBCSD* to enable the cross-industry exchange of primary data on GHG emissions between companies to ensure Scope 3 transparency.

*World Business Council for Sustainable Development:
World Business Council for Sustainable Development (one of the organizing bodies of the GHG Protocol)

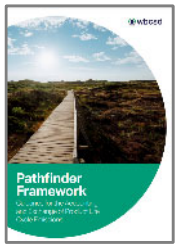
- In response to the challenges of Scope 3 calculation and reduction (lack of methodology to allocate GHG emissions to product level, lack of accurate and verified primary data, limited exchange of GHG emission data, etc.), the following is being considered to enable the exchange of primary data on emissions between supply chains.

  - A methodology for calculating and exchanging emissions data：PACT Methodology(previously Pathfinder Framework)

  - An open network for the confidential and secure exchange of emissions data based on the interoperability of technical solutions: PACT Network (previously Pathfinder Network): PACT Technical Specifications



Source: Pathfinder Network



Pathfinder Framework

Pathfinder Network

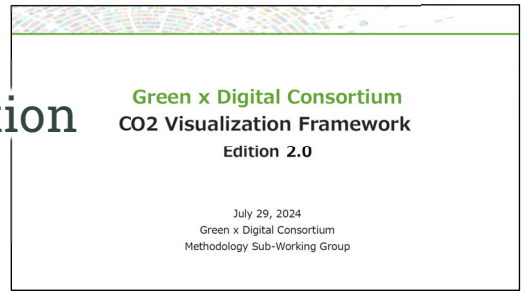
Alignment with WBCSD PACT for Global Data Collaboration

Green x Digital Consortium

Visualization WG

Methodology Sub-Working Group

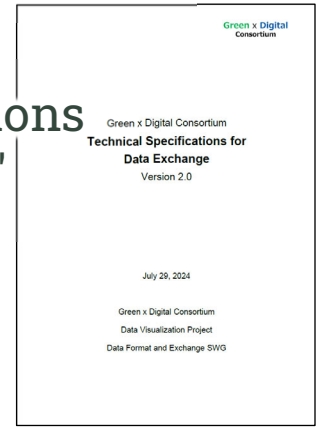
" CO_2 visualization framework"



Leader:
Mizuho Research & Technology,

Data Visualization Project Data Format and Exchange SWG

" Technical Specifications for data Exchange"

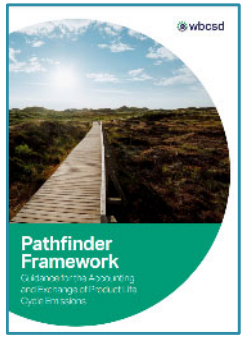


Leader: Fujitsu

PACT

- Methodology for emissions data calculation and exchange

Cooperation/Harmonization as a methodology



PACT Methodology
(previously Pathfinder Framework)

- Open network for confidential and secure exchange of emissions data

Cooperation/Harmonization as a data exchange method

PACT Network
(previously Pathfinder Network)

CO_2 Demonstration of Calculation and Data Linkage

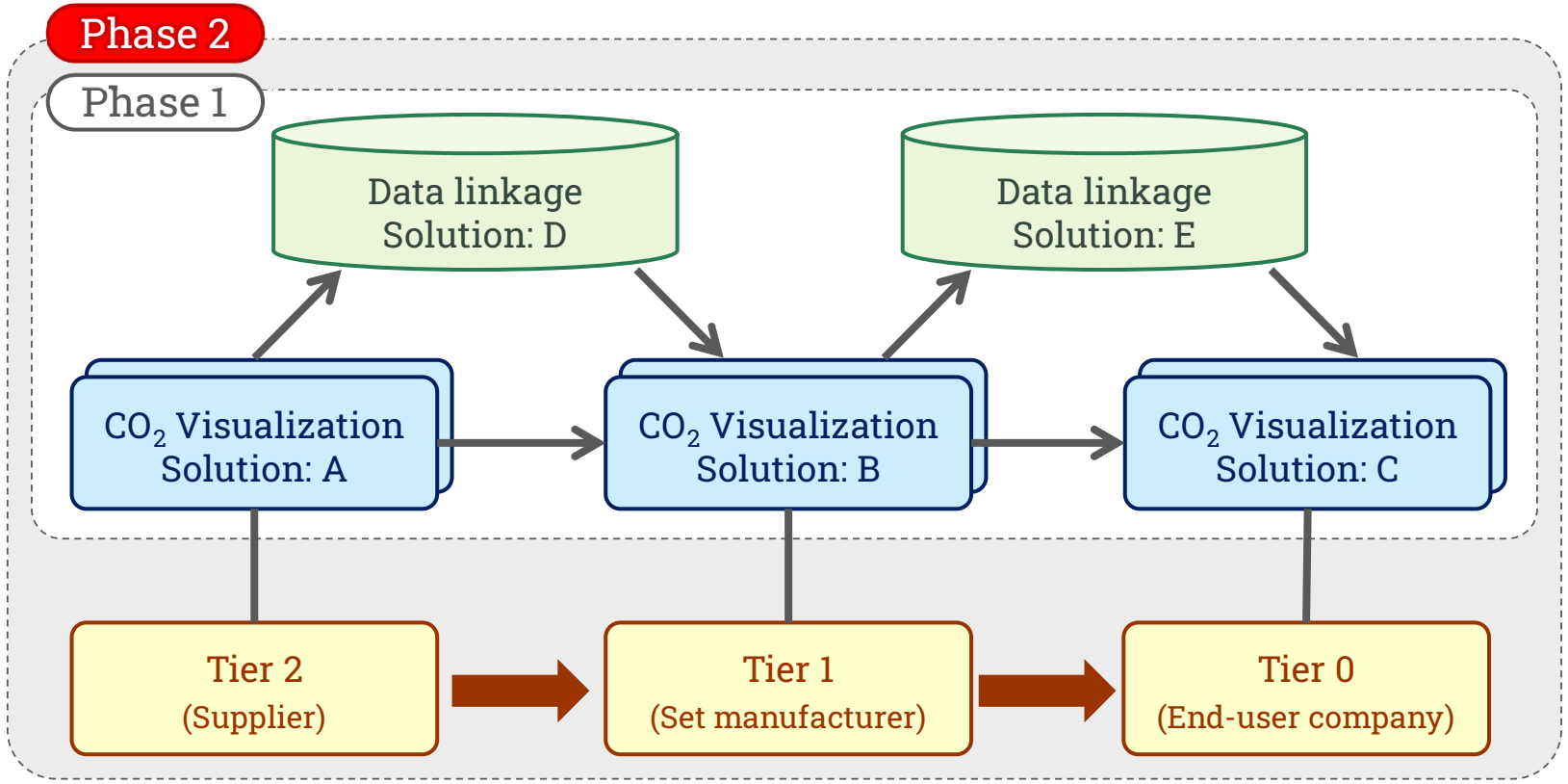
Green x Digital Consortium

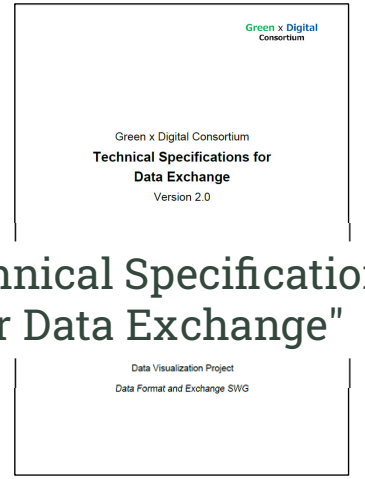
- Phase1 :CO_2 Interoperability testing of visualization and data integration solutions

(~January 31, 2023) *Data exchange in "product level data" based on "Pathfinder Network

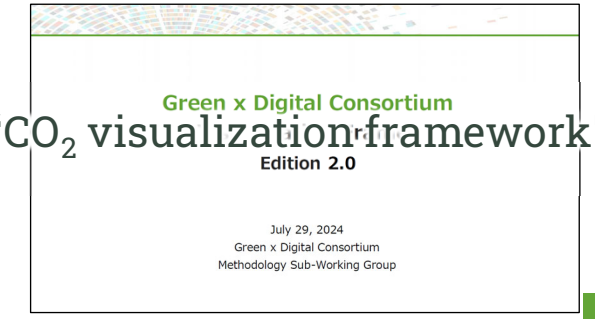
- Phase2 :CO_2 Testing including data acquisition, calculation, utilization, and accuracy verification

(~June 30, 2023) *Data exchange in “product level data” and “organization level data” based on the “CO_2 Visualization Framework“ in which user companies also participated.





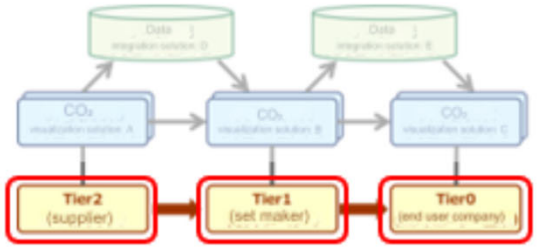
" Technical Specifications for Data Exchange"



“CO_2 visualization framework"

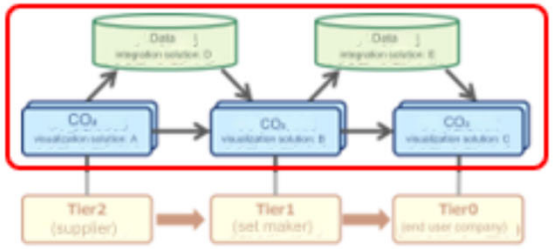
Purpose of the Demonstration

Verify CO_2 calculation method and feasibility of data linkage in supply chain



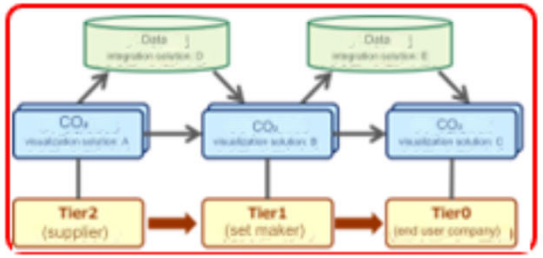
① **CO_2 calculation for a user company alone**

- Calculation of CO_2 emissions at the product or organizational level based on the CO_2 visualization framework



② **Data exchange in multi-user companies**

- Primary data acquisition from upstream companies in the supply chain based on "Technical Specifications for data linkage



③ **Utilization throughout the supply chain**

- Study of utilization for continuous improvement of CO_2 emission reduction at end-user companies

List of Companies Participating in Phase 2 of the Demonstration (2023)

Green x Digital Consortium

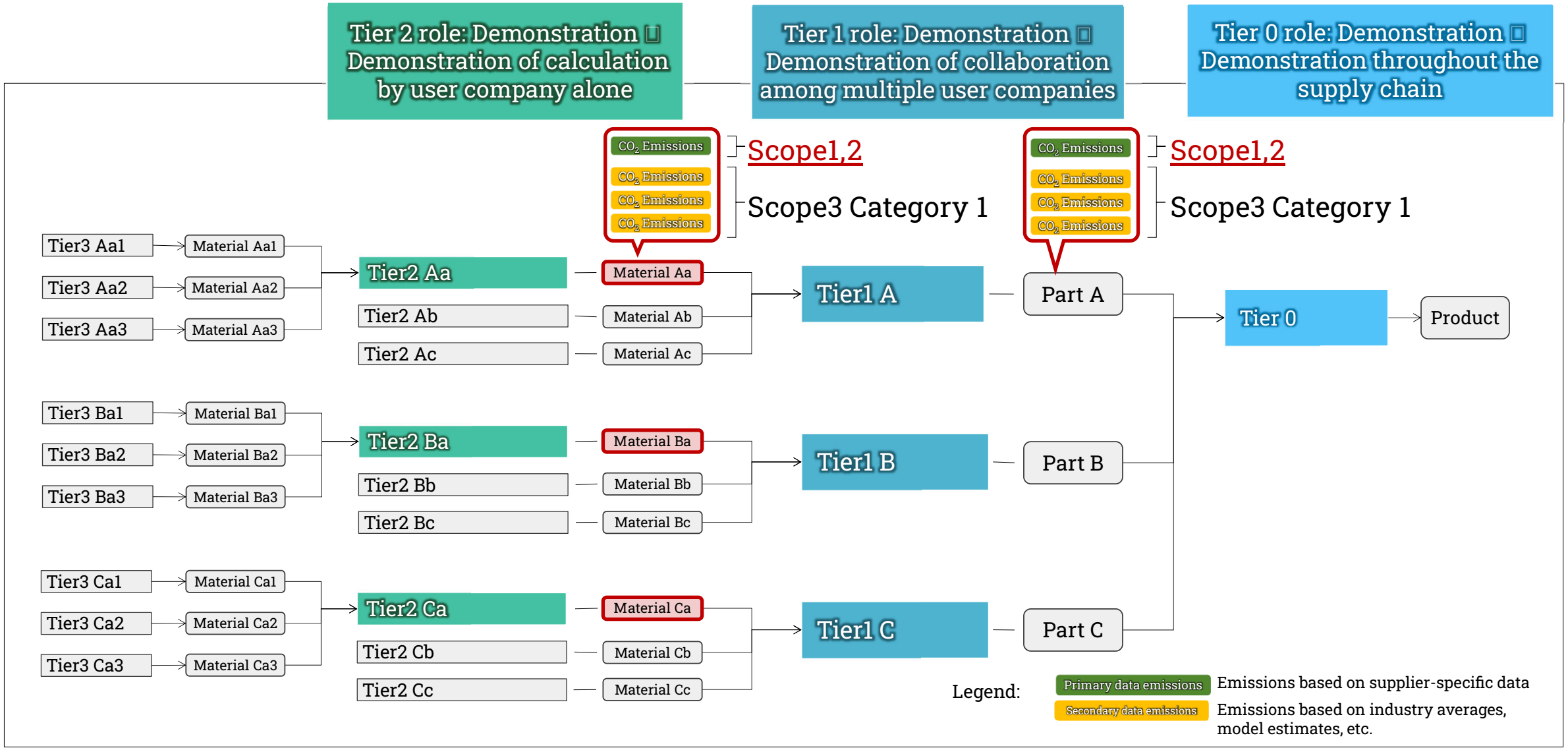
AISIN We Touch the Future
アスエネ
ABeam Consulting
WingArc 1ST The Data Empowerment Company
SBI R3 Japan
NTT DATA
Kawasaki
Canon
Suzuyo 鈴与商事
住友電工 Connect with Innovation
zeroboard
DNP 大日本印刷
chaintope
Deloitte. デロイト トーマツ
TOSHIBA
NAGASE
Nitto Innovation for Customers
Orchestrating a brighter world NEC
ORACLE
net one
NRI
PiD People in Dome
HITACHI Inspire the Next
HITACHI Inspire the Next 株式会社 日立ソリューションズ
boost technologies
FUJITSU
brother at your side
HONDA
MIZUHO みずほリサーチ&テクノロジーズ
MITSUI&CO.
unicharm ユニ・チャーム
Ridgelinez

32 companies in total

Demonstration 1: Calculation by a user company

Green x Digital Consortium

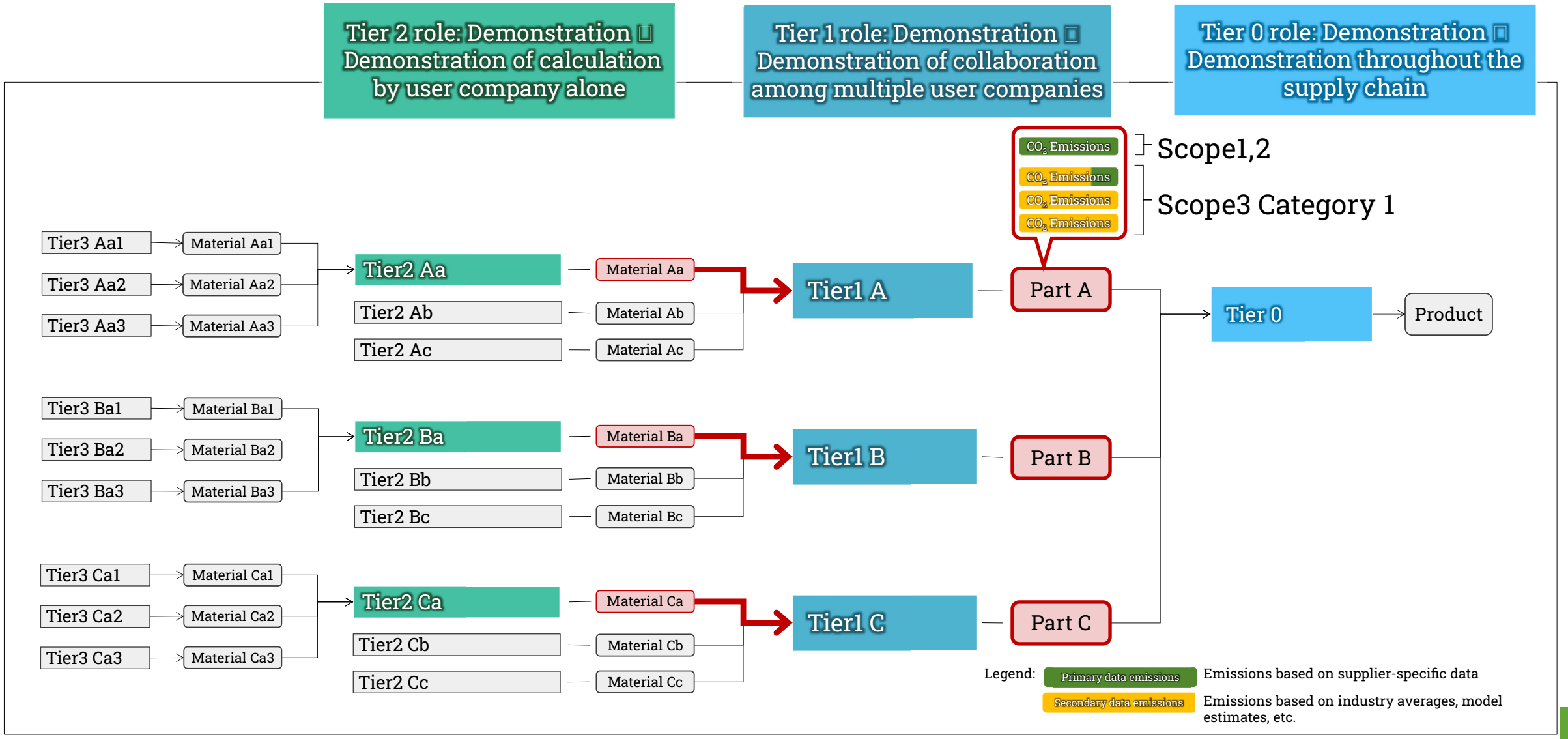
Tier 1 and 2 companies collect process identification and data on their emissions and calculate CO_2 emissions



Demonstration 2: Collaboration among multiple user companies

Green x Digital Consortium

Tier 1 companies obtain emissions intensity (primary data) of Tier 2 companies



Demonstration 3: Demonstration throughout the supply chain

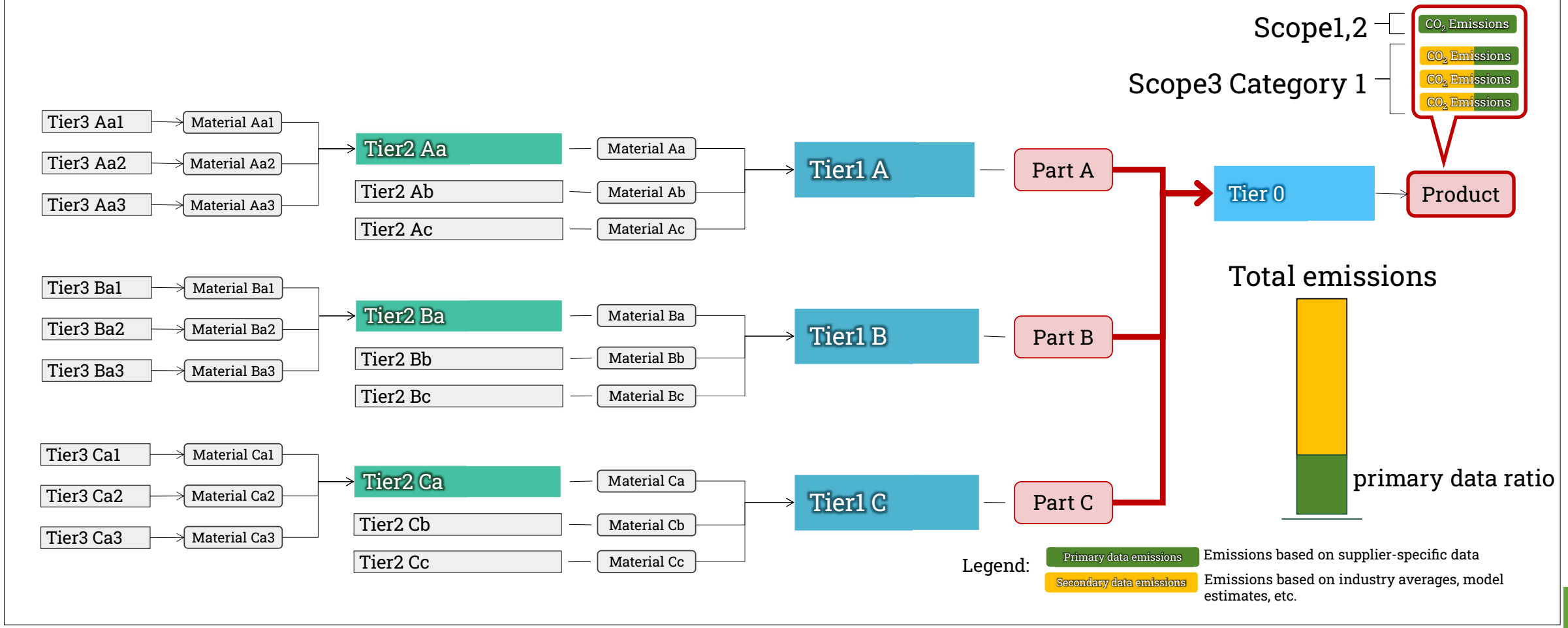
Green x Digital Consortium

Tier 0 companies consider using Tier 1 companies to reduce CO_2 emissions

Tier 2 role: Demonstration ☐ Demonstration of calculation by user company alone

Tier 1 role: Demonstration ☐ Demonstration of collaboration among multiple user companies

Tier 0 role: Demonstration ☐ Demonstration throughout the supply chain



Fujitsu's case:
Target to reducse GHG emissions : Net Zero in Scope3 by 2040

Fujitsu uvance

Scope3 Cate1
Reducing weight, reducing the number of parts, etc. environmentally conscious design

Scope3
Cate-4 fuel
Conversion (e.g. SAF)

Scope1
Electrification of green Fuel and equipment Fuel cells, etc.

Scope2
・introduction of renewable energy
・For renewable DC Clouding

Scope3 Cate 11
Environmentally conscious design

Scope3
Catch 12 Reuse, Recycling

upstream

Scope3: Indirect emissions across the value chain

① purchased products/ Service

⑥ business trip
⑦ commuting

④ transport and delivery

own company

Scope1: Direct emissions

fuel combustion

Scope2: Indirect emissions

use of electricity

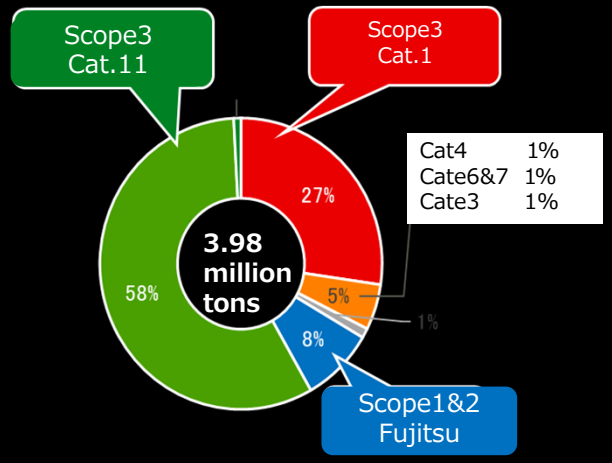
downstream

Scope3: Indirect emissions across the value chain

⑪ Using the Product

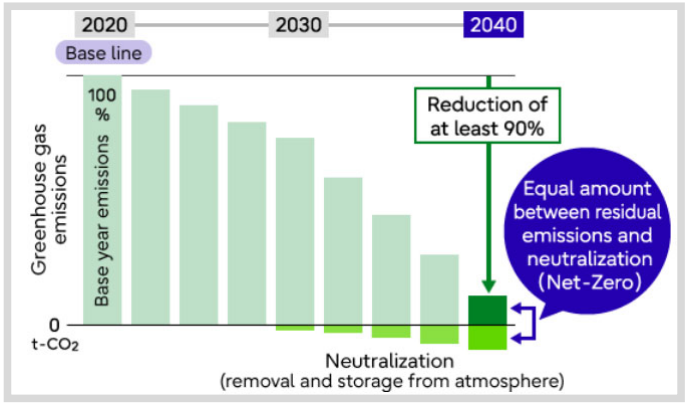
⑫ disposal of products

Supplier engagement is necessary

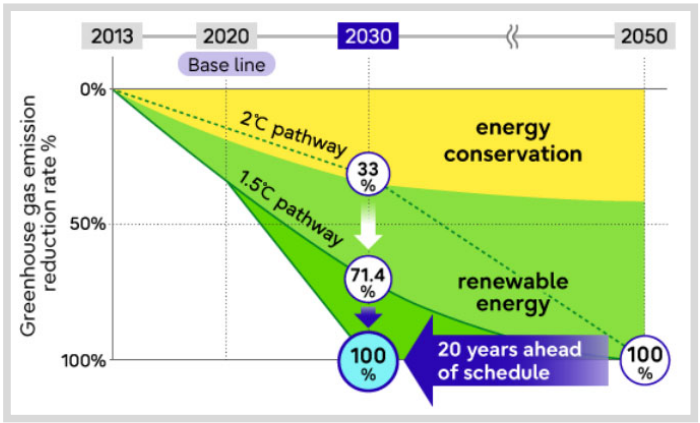


Fujitsu's GHG emissions (CO2eq.)

Aiming for Net-zero in FY 2040: SBTi Net zero Certification



Advance the initial target of 0 emissions in fiscal 2050 to fiscal 2030



Fujitsu's case:
Approach to realizing green growth

- It is important to provide added value by linking upstream global standards with the underlying data space
- Contributing to architecture design for data and system linkages as an area of industry-academia-government collaboration in Japan, the EU, and other countries

Global Standard

Global: WBCSD World Business Council for Sustainable Development, PACT, CDP, RE100, CLIMATE GROUP

Europe: Catena-X Automotive Network, CIRPASS-2 Digital Product Passport

Japan: Green x Digital Consortium

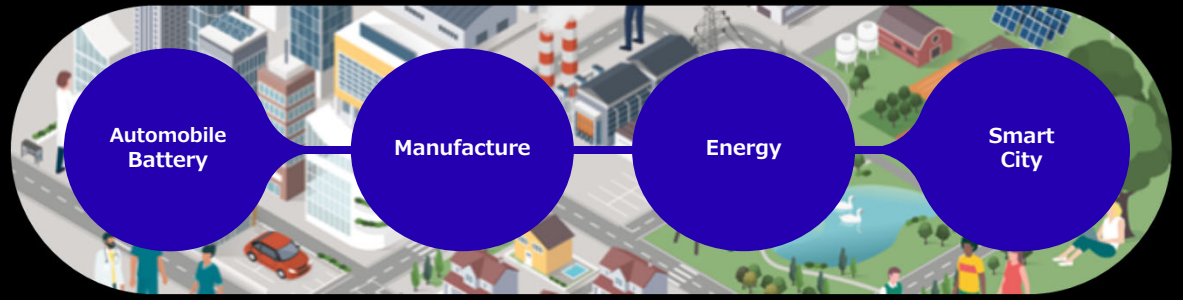
GX/SX Use Cases

- Climate change ESG investment
- Circular Economy
- Optimizing supply and demand balance
- Transport optimization in the supply chain
- Tracking of Green Energy

Fujitsu Offerings

- ESG-related / information visualization
- Finance / non-financial analysis
- Environmental value certification
- Data distribution

Data space



To connect businesses, governments and consumers **with trust**

Essential to solving social problems

Rulemaking

Co-creation and Offering Development
With Customers
MVP/MMP

Fujitsu's strengths

- customer base
- industry knowledge
- Technology
- Partner Collaboration

Support the use cases

Place for cross-cutting Data distribution

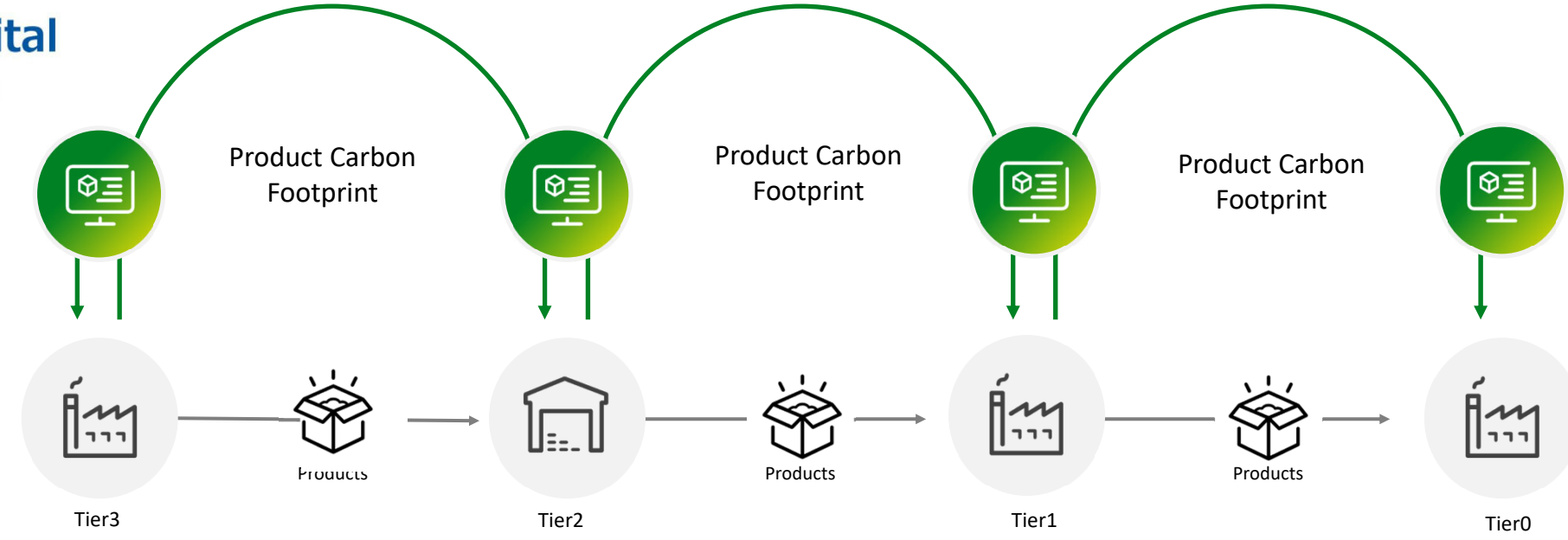
Fujitsu's case: Leading and accelerating decarbonization in supply chain through WBCSD PACT Implementation Program since FY2023

- In February 2024, as the further suypplyer-engamenget from FY2023, we asked major global suppliers to cooperate in CO2 data linkage of Product Carbon Footprint which using the primary data between companies in whole supply-chain. We were successful of CO2 emission data linkage among 13 major suppliers (as of November 2024) in Japan,Taiwan, Europe, and the U.S. through PACT-conformant solutions.
- ESG Management Platform has been updated PACT Technical Specification and passed the interoperability tests conducted by PACT with solutions from the Digital Sustainability Cloud of Institute for Information Industry, III in Taiwan and Evalue8 Sustainability in Australia.
- At the same time, we also implemented the visualization framework and technical specifications of the JEITA Green×Digital consortium.

PACT

Green x Digital Consortium

PACT Conformant Solutions



Toward Social Implementation

Green x Digital Consortium

FY 2021	FY 2022	FY 2023	FY 2024	FY 2025□

Preparation Phase

Primary report (Awareness alignment)

Demonstration phase

CO_2 Visualization framework

Technical specifications for data linkage

Demonstration for CO_2 calculation and data linkage

Social Implementation Phase

Dissemination and expansion of framework and technical specifications

Education and seminars for utilization

Update/additional studies for framework and technical specifications

Continued global collaboration, study of data space support, etc.

Logistics CO_2 guidelines for visualization

Promotion of guideline utilization, etc.

Green x Digital Consortium

Japanese

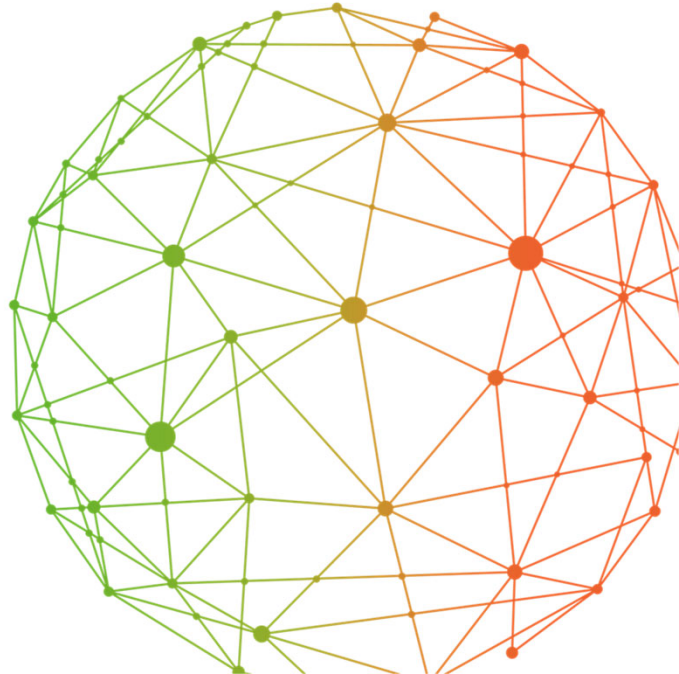
English

JEITA Japan Electronics and Information Technology Industries Association

Data Spaces Symposium

Call to action:
ICT providers, enable data spaces!
Industries, join or build data spaces!

Ana Garcia, Boris Otto, Chandra Challagonda,
Lars Nagel, Ulrich Ahle



Data Spaces Symposium

Farewell message | Return home safe and sound

Ana Garcia