



# Step Change to Blockchain & AI...

**UNFC and UNRMS into the digital age**

Julian Hilton, Chair SDG Delivery  
Working Group (EGRM)  
Geneva, April 23, 2024



**RESOURCE MANAGEMENT WEEK**

**2024**



**UNECE**

# Straws in the wind

Be not afeard. This isle is full of noises



- AI and Blockchain Applications
- Disruptive Technologies Driving the Circular Economy
- Resource Servitisation and its Role in Sustainability



# The ethical and economic core

The clouds methought would open and show riches

Delivering a public good that can both drive the transition to and support the maintenance of the circular economy.

Integrated 3 service models

- i. **Resource as a Service:** for meeting essential resource demands (critical needs) as a Service and a Public Good.
- ii. **Resource Supply System:** for securing resource supply, especially of materials critical either economically or socially or both, within an integrated resource nexus.
- iii. **Blockchain and machine learning/ artificial intelligence model for resource management**



Economic Commission for Europe  
Committee on Sustainable Energy  
Expert Group on Resource Management  
Thirteenth session  
Geneva, 25-29 April 2022  
Item x of the provisional agenda  
Development of the United Nations Resource Management System.

**DRAFT FOR REVIEW** United Nations Framework  
Classification for Resources and United Nations Resource  
Management System: A Systems approach to enabling  
resource as a service paradigm through blockchain  
technologies

Prepared by the Sustainable Development Goals Delivery Working  
Group of the Expert Group on Resource Management

#### Summary

This concept note provides the arguments for progressing towards a sustainable, integrated and more circular economy utilizing systems thinking. The "Resource as a Service" paradigm should be explored to shift the focus from commodities to outcomes. A shift of this kind needs to consider the complexity of the Resource Supply System. A blockchain technology approach to tokenization, tracking and traceability of both resources and monies is also seen to be of the essence in creating a systemic solution to many of the more egregious weaknesses and vulnerabilities of the linear socio-economic model or resource management. This concept note argues that the three complementary models discussed should be further developed and included in the United Nations Resource Management System toolkit.

#### Acknowledgements

The Sustainable Development Goals Delivery Working Group of the Expert Group on Resource Management has prepared this concept note. Kenz Hilton, Shaw Chifamba, Julian Hilton, Malika Moussaid, David Elliott and Harikrishnan Tulsidas provided specific inputs and are thanked for their contributions.

# Quantifiable benefits from using blockchain/AI

O brave new world that has such people in't

The flows of monies and molecules converge in blockchain, in the process offering a systemic, “Resource as a Service” solution to resolving many of the more egregious weaknesses and unwanted negative externalities of the linear socio-economic model of resource management

- making the value of resources more apparent and transparent
- facilitating a new system of pricing and trading natural resources
- preserving and enhancing value through the resource life cycles
- incentivizing people to adopt circular behaviours
- integrates human and systems capabilities



# Tangible ESG: Governance “Baked In”

What’s past is Prologue



Some 90% of global corporations now report using a form of ESG (Environmental, Social and Governance) metrics.

But these are not normalised or standardised. They are also controversial and contested.

Bringing:

- Use of Open Source Code into the system for accessibility, transparency and interoperability
- The Independence of the UN and its Expert Groups, eg the Expert Group on Resource Management
- The power of blockchain to deploy Resource Passports (proof of provenance) to track, trace, and share transparently (interoperability)
- The power of AI to identify patterns of illicit or unethical resource and money flows

Systems capabilities assign to a UNRMS blockchain, “smart contract” system the task of tagging and tracking the resource flows, which people are typically not very good at

Human capabilities of the people can be reassigned to the higher value parts of the managing resources in the circular economy, such as the pursuit of benefits to the environment, to society, and good governance, including audit and validation





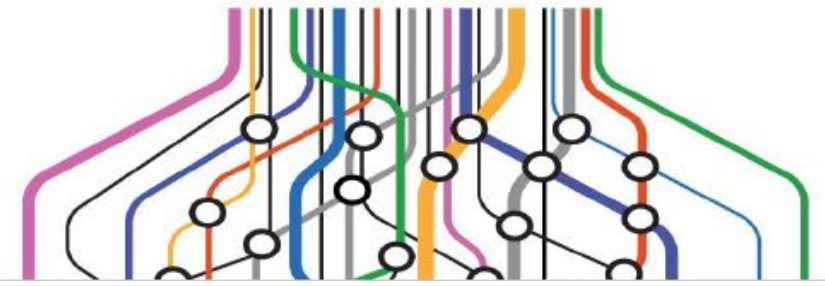
# Transparency at Scale

*UNECE recommendation 49*  
***UN Transparency Protocol (UNTP)***

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**UN / CEFAC**



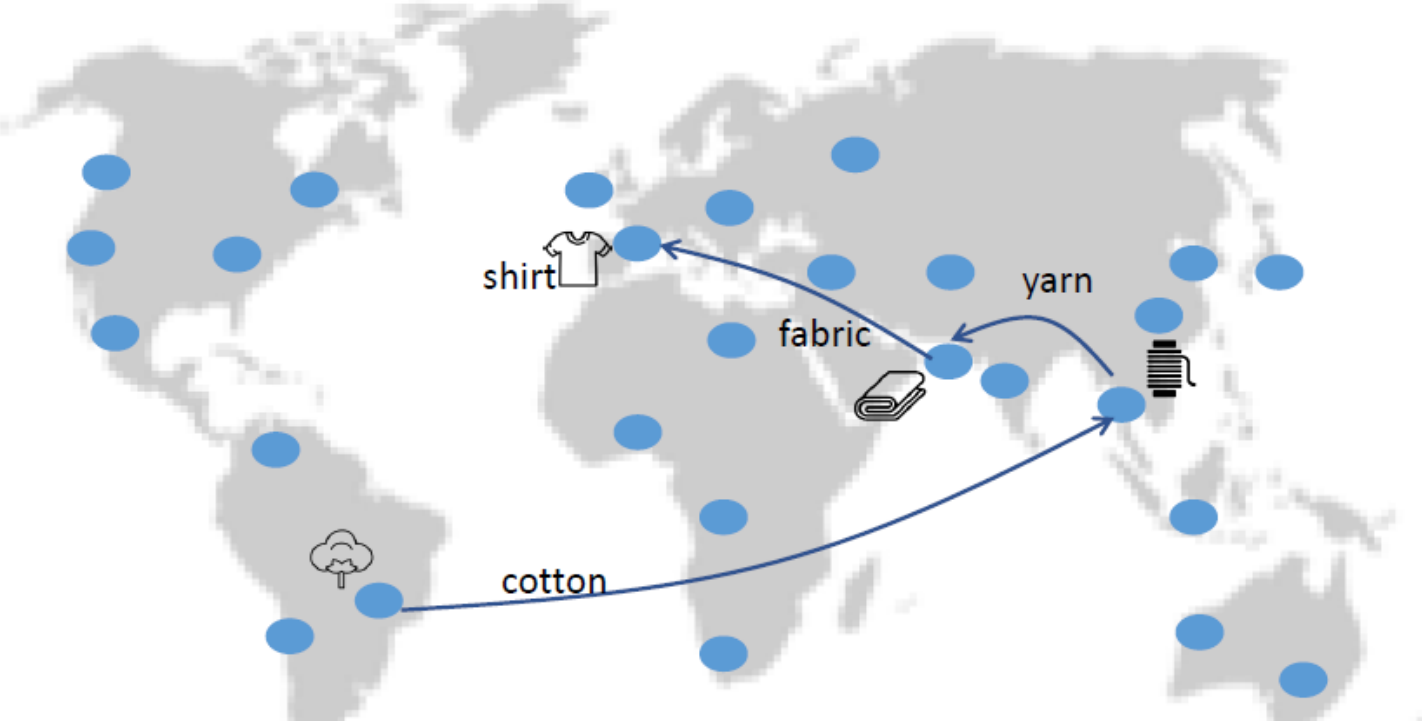
# #1 – UNTP is an interoperability protocol, not a platform

Leave data where it is but link it together when needed using decentralised events.

Use any software you like – so long as it conforms to UNTP.



**UNTP**



Based on  
GS1 EPCIS



Thousands of platforms, millions of value-chains, billions of transactions

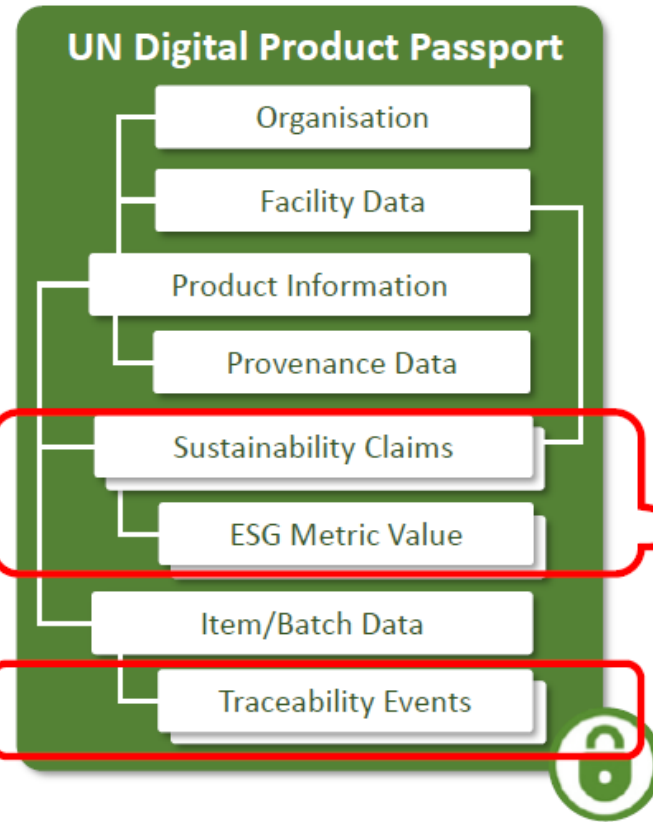
## #2 – The UNTP passport is a bundle of differentiated value

ESG performance can only improve with informed and differentiated supply decisions. DPP claims are categorised for easy IFRS mapping.

There's a passport for every goods shipment



Links



UNTP

Sustainability disclosures

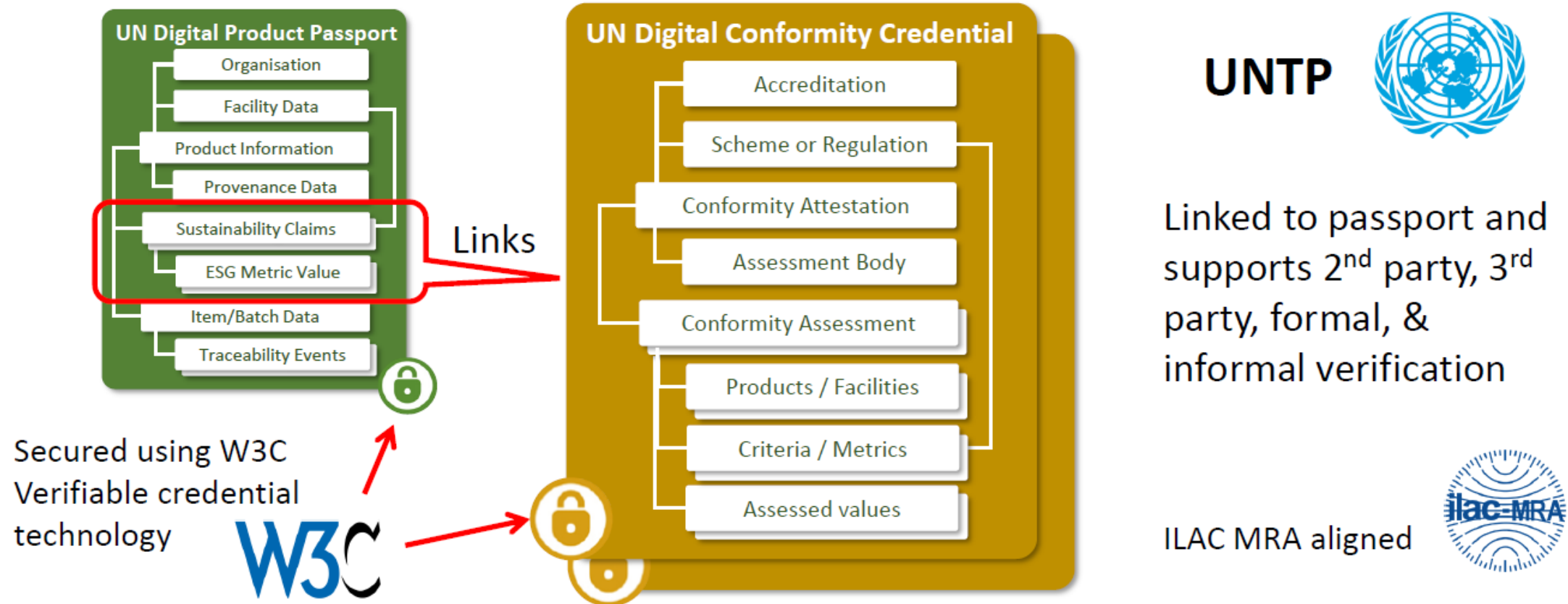


IFRS topic mapped



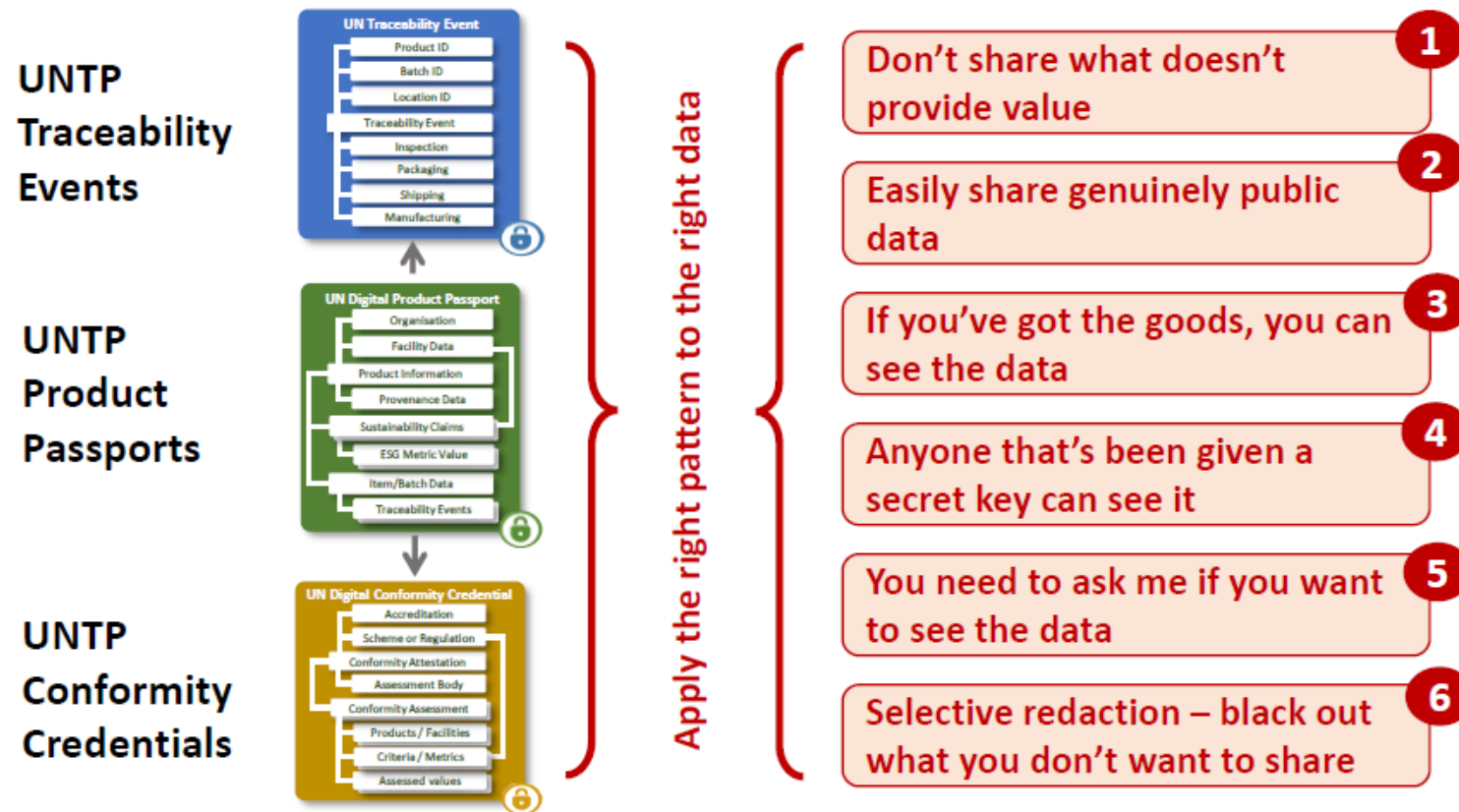
### #3 – UNTP includes verifiable conformity evidence

Digital product conformity credential - developed in conjunction with national accreditation authorities and conformity assessment bodies.



# #4 – UNTP includes a privacy & security toolkit

Six tools that allow UNTP implementers to choose their own balance between confidentiality and transparency.

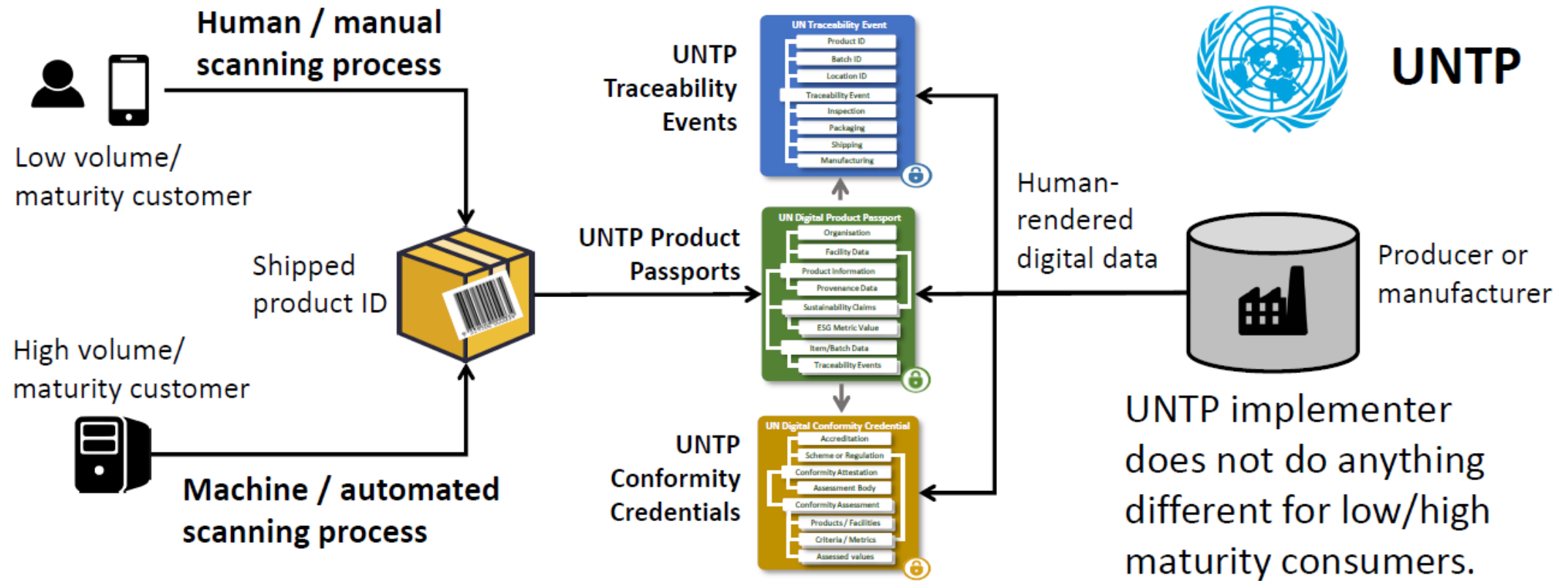


**UNTP**

Different data needs different levels of protection.

# #5 – UNTP allows implementation without dependency

There's no need for system-to-system connections between actors. Data is discoverable from products and is BOTH human and machine readable.



# Logical model UNTP

being transported And rapt in secret studies

Blockchain and AI enabled

Open AI source code compliant

Enables rapid application development

Now in active development with

- Resource passports

- Credentials conformity, eg

  - COO labelling

- Trackability & traceability

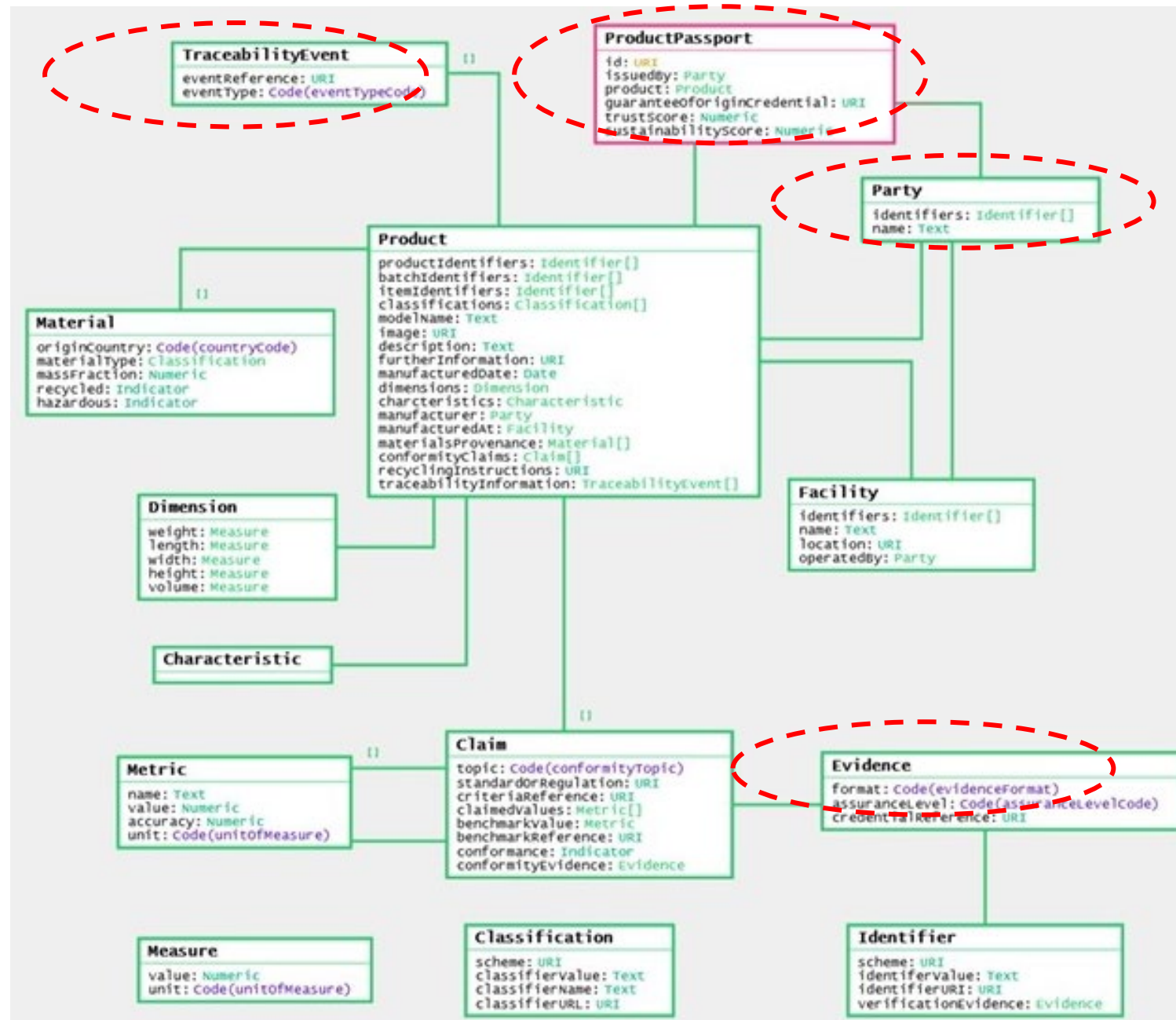
- In-built integration with GIS

Discoverability/ Interoperability

- SIC code and similar

  - classification code

  - compliant eg UNFC



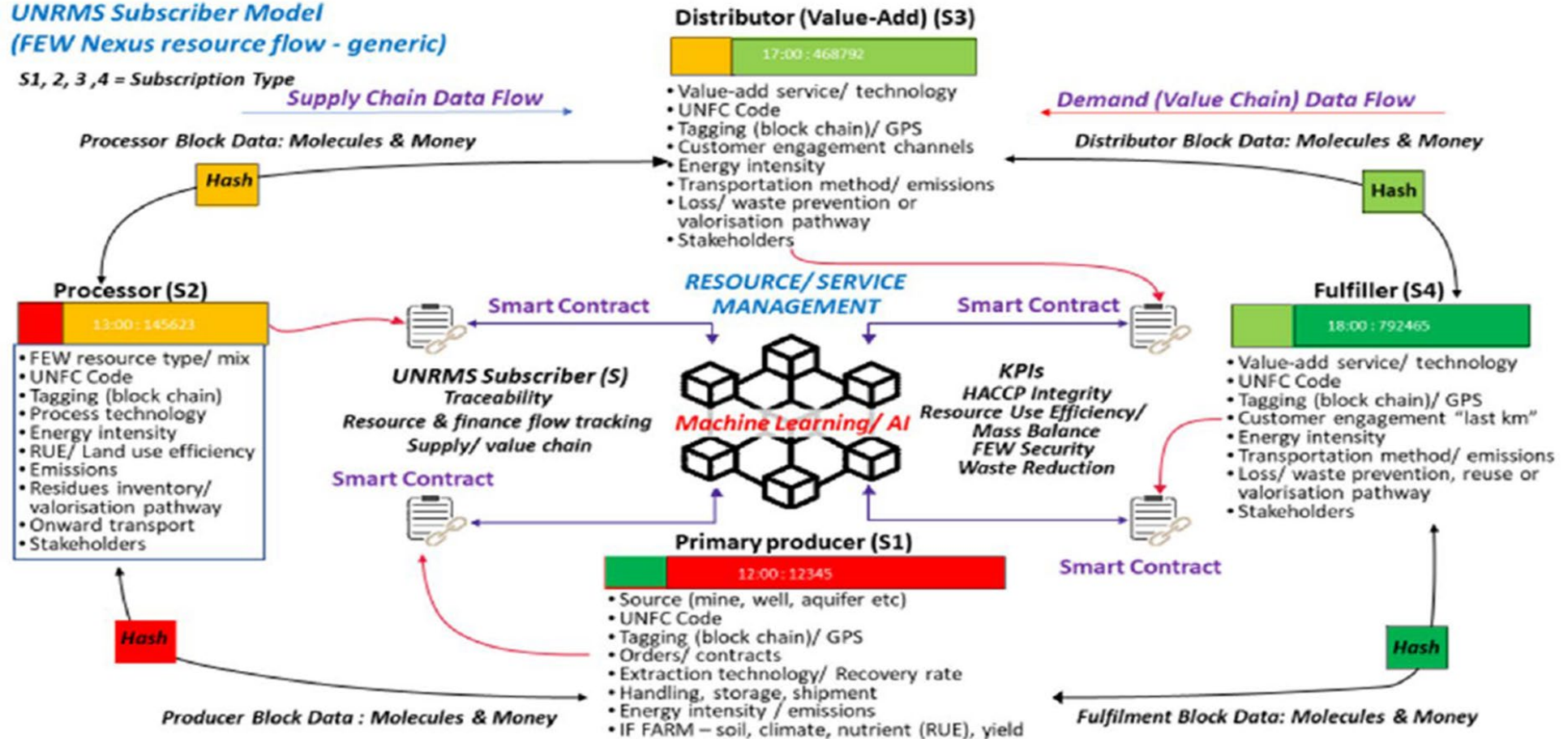
# Integrated Blockchain/ Artificial Intelligence

We'll deliver all and promise you calm seas

## UNRMS Subscriber Model

(FEW Nexus resource flow - generic)

S1, 2, 3, 4 = Subscription Type





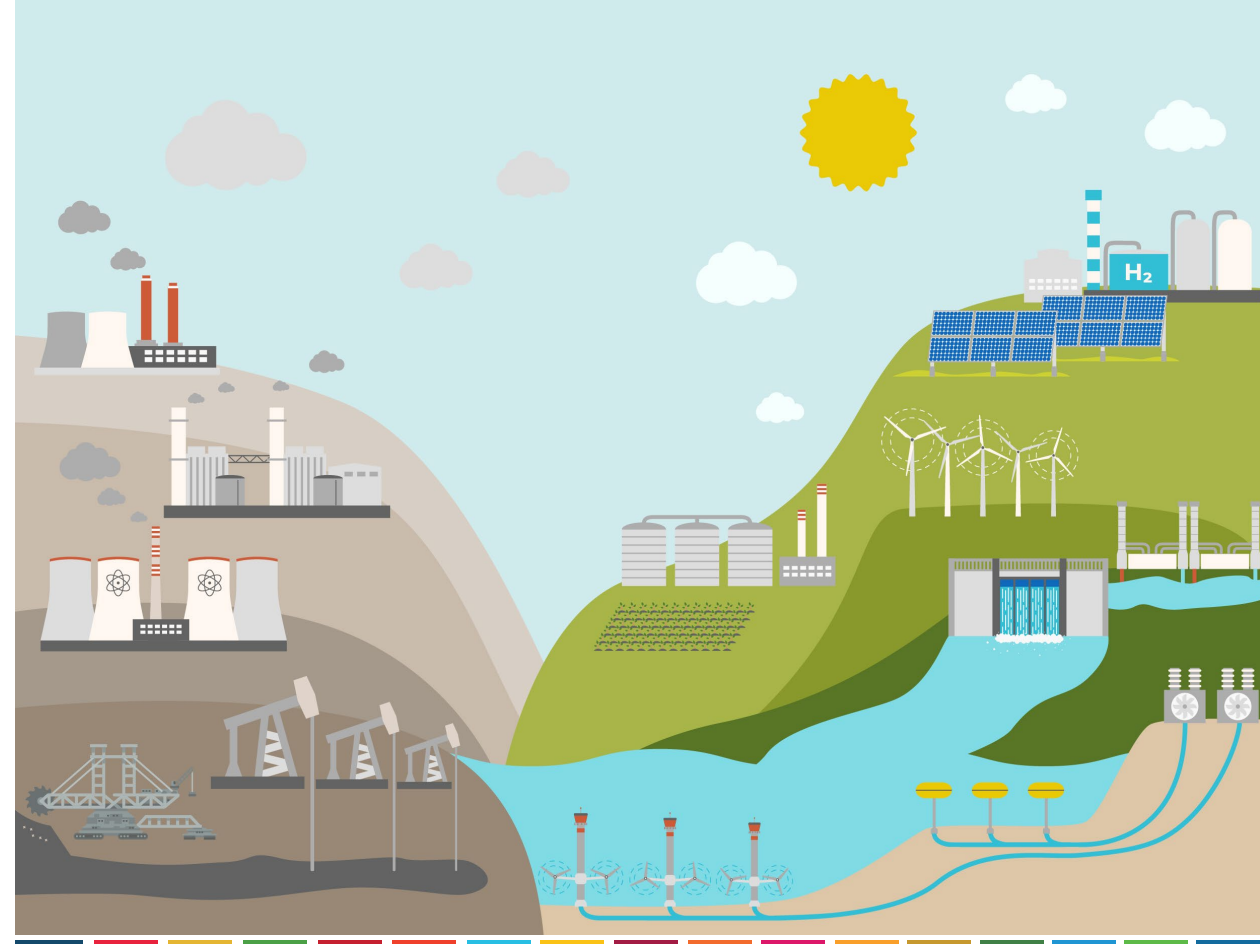
THE VIEWS EXPRESSED ARE THOSE OF [AUTHOR NAME AND/OR ORG] AND DO NOT NECESSARILY REFLECT THE VIEWS OF THE UNITED NATIONS.

# My revels are now ended Thank you!

Julian Hilton  
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### 2024



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