UN/CEFACT Project Proposal

Project Name:	Critical Minerals Traceability & Sustainability		
Date submitted:	22-Mar-2023	Proposed by:	Nancy Norris

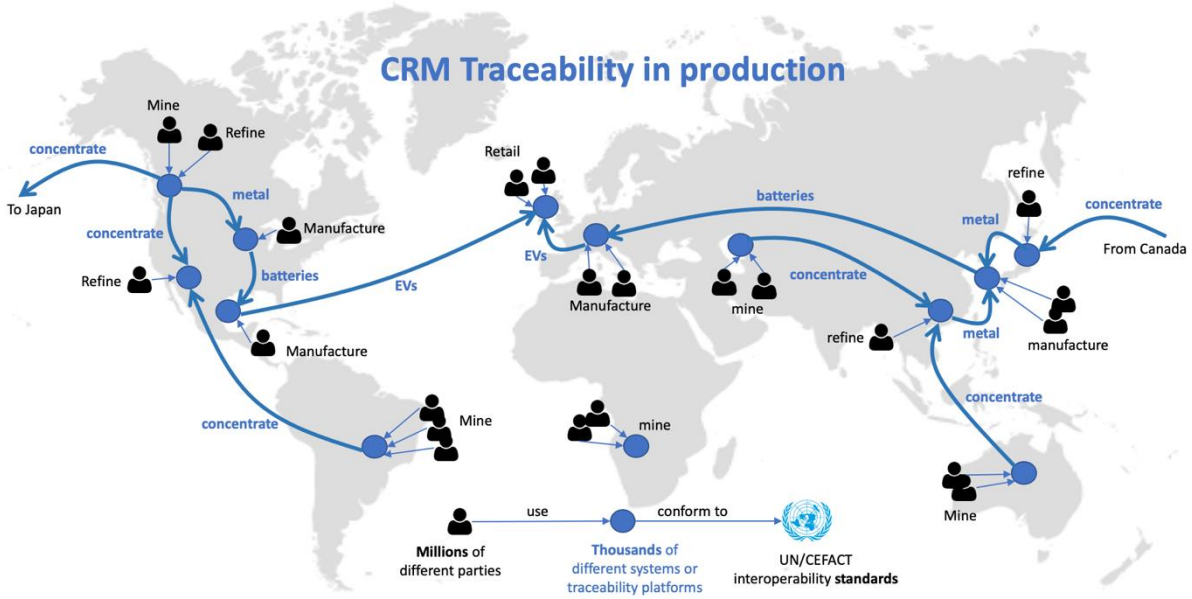
1. Project purpose

Required

In line with the UN sustainability goals and building on the success of the Textile & Leather traceability project, this project proposal seeks to develop a traceability and sustainability framework for critical raw materials (CRM[1]). This project supports the UN focus on extractive industries (https://www.un.org/sg/en/content/sg/statement/2021-05-25/secretary-generals-remarks-the-global-roundtable-transforming-extractive-industries-for-sustainable-development-delivered) and builds on the UN/CEFACT role & capabilities to deliver digital standards for sustainable supply chains.

The purpose of this project is to uplift verifiable critical raw materials supply chain r***esilience*** and ***sustainability*** through digital standards for data and trust.

- **Resilient** supply chains are designed to avoid risky dependencies and can withstand disruptions.
- **Sustainable** supply chains are designed to minimize environmental impacts and maximise human welfare.



Both goals are met through traceability and transparency measures that this project will support through standardization. There are already many supply chain traceability platforms on the market. None will dominate the world's supply chains and so must improve their ***interoperability*** so that supply chains can be traced across multiple independent platforms. This is the primary purpose of this project – namely to focus on the trusted exchange of supply chain sustainability information *between* platforms in a scalable, high integrity, low cost, and privacy preserving manner.

This project will

- Leverage the experience from the UN/CEFACT textile & leather project (https://unece.org/sites/default/files/2022-01/ECE-TRADE-463E.pdf) but also accommodate the lessons learned (for example that there are 1000's of platforms for traceability but what matters for complex supply chains is interoperability between platforms).
- Leverage the recent UN/CEFACT project deliverables including the recommendations on digital trust using verifiable credentials (https://unece.org/sites/default/files/2022-09/WhitePaper_VerifiableCredentials-CBT.pdf) as well as the representation of UN/CEFACT semantics as a modern web vocabulary (https://vocabulary.uncefact.org/)
- Leverage the experience of participating nations in their various national efforts to digitalise their CRM supply chains, whether as producer or consumer. One example is the British Columbia Ministry of Energy, Mines and Low Carbon Innovation work on digital trust.
- Work with existing industry groups and consortia that are working in the CRM space.
- Ensure that the framework includes sufficient digital trust so that sustainability claims associated with critical minerals supply chains can be verified and trusted, thereby tackling the increasing incidence of greenwashing and mass-balance fraud.
- Be specific about the role of government and national accreditation authorities as "trust anchors" in the network of supply chain actors.
- Ensure that the framework supports both supply chain sustainability and resilience goals of producer and consumer economies.
- Deliver a cross-border traceability framework for CRM that provides the necessary standards guidance to permit end-to-end critical minerals digital traceability ***across different commercial and national boundaries*** – for example from lithium mine to rechargeable battery.
- Test the framework via proof-of-concept implementations between at least three nations.

Critical raw materials are part of our daily lives and paramount to the functioning of our industrial ecosystems (digital, transport, construction, renewable energy technologies, lightweight); for instance, tungsten in phones, lithium in batteries, gallium and indium in LED lamps, rare-earth elements in magnets for digital technologies, electric vehicles and wind generators. Such minerals are "critical" as they represent the most economically important raw minerals with a high supply risk and are concentrated in few geographical areas. Considering cost-benefit aspects and a risk-based approach (for CRMs sourced in conflict-affected states), traceability and transparency tools will be key to support sustainable, resilient and resource-efficient of CRMs. Transparency and traceability would also support addressing unintended consequences, social and environmental sustainability-related issues stemming from heavy metal pollution, resource depletion and habitat destruction.

2. Project scope

Required

This project will deliver a suite of materials that support national policy makers, CRM industry actors, and traceability technology providers.

- Call for Participation: A stakeholder mapping and engagement strategy to support a call for participation that will attract strong participation.
- UN Policy Recommendation: A guidance document for national policy makers and peak bodies that provides an overview of business drivers, high level business requirements, and implementation guidance for a CRM traceability framework.

- A Business Requirements Specification: Documenting the detailed interoperability requirements for high trust critical minerals supply-chain traceability & transparency at scale. Including credential types, trust architecture and mechanisms for physical-digital links.
- A JSON-LD vocabulary: for critical raw materials sustainability claims that builds on existing work from the International Trade Centre (https://standardsmap.org/en/identify) and other relevant sources.
- Credential schema: to support each certificate type identified during the requirements gathering. These define the interoperability boundary between participating supply chain platforms.
- An implementation guide: to support organisations and software platforms that will build compliance to the interoperability standards.
- A test suite: that can be used by implementers to verify conformance with the credential standards.
- Any adjustments needed to the Buy-Ship-Pay model.

3. Project deliverables and 4. Exit Criteria

Required (check all that apply)

Please note that the Bureau may reassess and change a deliverable after its completion at its discretion.

	Project deliverables	**Exit Criteria**
☒	Policy Recommendation	Public Review logs demonstrating all comments have been satisfactorily resolved; Final document ready for publication.
☒	Business Requirement Specification	
☐	Technical Specification	
☐	White Paper	Final document ready for publication.
☐	Green Paper	
☐	Requirement Specification Mapping	
☐	Core Component Business Document Assembly	
☒	Guidelines	
☐	Executive Guide	
☐	Brochure	
☒	JSON-LD vocabulary	Final deliverable ready for publication.
☒	Credential Schema	
☐	Message Schema	
☐	Internal UN/CEFACT Document	Final document ready for Bureau approval.
☒	Other (specify)	Test harness

5. Project Team membership and required functional expertise

Membership is open to UN/CEFACT experts with broad knowledge in the area of:	Critical Raw Materials (CRM) supply chains. Digital trust and verifiable credentials.

In addition, Heads of Delegations may invite technical experts from their constituency to participate in the work.

Experts are expected to contribute to the work based solely on their expertise and to comply with the UN/CEFACT Code of Conduct and Ethics and the policy on Intellectual Property Rights.

6. HoD support

Required for Technical Standards, Business Standards and UNECE Recommendations. And at the request of the UN/CEFACT Bureau. A request for HoD support will be circulated to all HoDs in these cases. If you have verbal confirmation from specific delegations of their support, please list these here.

Projects that require HoD support must obtain this within 6 months of Bureau provisional approval.

Canada
Australia
Russia

7. Geographical focus

The geographical focus of the project is global

8. Intial contributions

The following contributions are submitted as part of this proposal. It is understood that these contributions are only for consideration by the Project Team and that other participants may submit additional contributions in order to ensure that as much information as possible is obtained from those with expertise and a material interest in the project. It is also understood that the Project Team may choose to adopt one or more of these contributions "as is".

List any initial contributions:

This project builds upon work already completed by UNECE and partner organisations.

- Rec 46 - https://unece.org/sites/default/files/2022-01/ECE-TRADE-463E.pdf
- T & L BRS - https://unece.org/sites/default/files/2021-03/BRS-Traceability-Transparency-TextileLeather-Part1-HLPDM_v1.pdf
- VC White paper - https://unece.org/sites/default/files/2022-09/WhitePaper_VerifiableCredentials-CBT.pdf
- Supply chain JSON-LD vocabulary - https://vocabulary.uncefact.org/ (note – to be updated with BSP 22A input)
- 22A BSP and SDCE RDMs upon which the JSON-LD vocabulary is based.
- GS1 CBV & EPCIS 2.0 - https://www.gs1.org/standards/epcis
- ITC Standards mapping - https://standardsmap.org/en/identify

Furthermore, there are a number of industry and national groups already working in the CRM space that may participate and contribute. This include but are not limited to :

- The World Economic Forum (https://www.weforum.org/) and their Global battery alliance (https://www.globalbattery.org/). This interoperability standards project will complement the WEF work in the CRM domain.
- Financial institutions and metal trading platforms such as the London metal exchange (https://www.lme.com/en/)
- Accreditation authorities at global (eg https://www.tic-council.org/) and national levels, together with their members that are the key auditors and certificate issuers of sustainability claims.
- Sustainability standards organisations at global and national levels that define sustainability criteria for their geographic or industry sectors.
- Mining industry associations and their members including but not limited to https://www.ameslab.gov/cmi, https://www.global-reia.org, https://www.internationaltin.org/tin-supply/, https://www.cobaltinstitute.org, https://www.gold.org , https://lithium.org/about/news/
- National regulators that define sustainability compliance requirements (eg ministries of mines) and also that seek to support their exporting industries to meet import country requirements (eg ministries of trade).

- Traceability platform technology vendors that will be implementers of the standards defined by this project so that they can support their users needs to connect into the global supply chain.

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9. Resource requirements

Participants in the project shall provide resources for their own participation. The existence and functioning of the project shall not require any additional resources from the UNECE secretariat.

Any additional request:	*Note that additional secretariat resources may be required or this project (community engagement, specialist advice, implementation testing) however these additional resources will be funded via contributions from some project member organisations (government & commercial).*

10. Proposed project leadership

(subject to Bureau approval)

Proposed:	Nancy Norris	E-mail:	
Proposed:		E-mail:	

11. Milestones (repeat for each deliverable, if different)

The following are draft milestones of the project.

	ODP Stage	Expected Completion Date	
Yes	Project Inception	1 month	
Yes	Requirements gathering	☒	1 month
Yes	Draft development	☐	3 months (Very quick)
		☐	6 months (Quick)
		☒	12 months (Normal)
		☐	18 months (Normal)
		☐	24 months (Long)
Yes	Implementation Testing	☒	6 months
Yes	Public Draft Review	☒	2 months
Yes	Project Exit	1 month	