

UN/CEFACT Project Proposal

Project Name:	Critical Minerals Traceability & Sustainability		
Date submitted:	1-Nov-2024	Proposed by:	Nancy Norris

1. Project purpose

Required

In line with the [United Nations \(UN\) Sustainable Development Goals](#) (SDGs) and building on the success of the [UNECE Textile & Leather traceability project](#), [this project](#) seeks to empower the Critical Raw Material (CRM) industry with practical, low cost tools for the digital data exchange to achieve product differentiation, maximize the value of existing permitting and ESG compliance efforts, counter greenwashing, and support a more sustainable global economy. This project supports the UN focus on extractive industries and leverages the [UN Center for Trade Facilitation and Electronic Business'](#) (UN/CEFACT) role and capabilities to deliver digital standards for sustainable supply chains.

The project is developing a standardized methodology for interoperable supply chain data exchange by adapting the [United Nations Transparency Protocol \(UNTP\)](#) to the specific needs of the CRM industry. The draft standard, called UNTP-CRM, is based on a simple pattern of data sharing, in which holders of up-and-midstream CRM supply chain data (miners, smelters, processors, manufacturers etc.) can publish and link information about shipments of their goods in a manner that can be discovered and understood by interested parties, such as customers, border authorities, and regulators. [Trust anchors](#), such as performance certifiers and governments, can publish related sustainability certificates and permits that can be digitally linked to the claims being made about shipments of goods, increasing the legitimacy of those claims.

The use of advanced digital technology, called verifiable credentials, ensures that all data is verifiable, protected, and accessible only to parties with permission granted by the original data owner. The diagram below shows the commercial interaction between buyers and sellers when using advanced digital technology.

The Commercial Interaction



Other Value Chain Actors



Critical raw materials (CRM) are metals, non-metals (minerals) and other substances (e.g. Helium) that are considered essential for renewable energy transition, digital economy and national security and whose supply may be at risk due to geological scarcity, geopolitical issues, trade policy or other factors. CRM supply chains are often long and complex, involving multiple organizations and crossing several international borders as materials move from raw material extraction to finished products.

The project seeks to make CRM supply chains more sustainable and resilient by improving transparency and traceability.

- Sustainable supply chains minimize environmental impacts and maximize human welfare.
- Resilient supply chains avoid risky dependencies and can withstand disruptions.
- The project aims to create standards for:
 1. Compatibility between digital tools and reporting platforms.
 2. Identifying areas of consensus within existing sustainability certifications.
- These standards will enable data to be exchanged internationally, making it easier to prove where and how critical raw materials are extracted and used.

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 and subnational efforts to digitalize their CRM supply chains, whether as producers or consumers. For example, the British Columbia Ministry of Energy, Mines and Low Carbon Innovation works on digital trust.
- Work with existing industry groups and consortia 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. This will thereby tackle the increasing incidence of greenwashing and mass-balance fraud.
- Be specific about the role of governments 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 mines to rechargeable batteries.
- Test the framework via proof-of-concept implementations between at least three nations.
- Develop a White Paper on conflict of laws and facilitating digital product passports in cross-border supply chains to achieve legal coordination and establish traceability in global trade law.

What this project NOT doing:

- We are not creating another CRM traceability platform nor are we planning to pick any winners. We are creating a standard that CRM traceability solution providers can adopt to facilitate interoperability with other platforms.
- Not defining new sustainability standards or permitting processes. We aim to enable the recognition of current sustainability certifications and regulatory permits and increase the value for miners of the permits and certifications they already hold.
- We aim to identify a core set of criteria that supply chain actors can use when making claims about their products and enable a standard for digitally linking these claims to existing permits and sustainability certifications.

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.
- **Technical Specification:** Documenting the detailed technical requirements for high-trust critical minerals supply-chain traceability & transparency at scale. Including credential types, trust architecture and mechanisms for physical-digital links.
- **A web vocabulary:** for critical raw materials sustainability claims that build 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 organizations and software platforms that will build compliance with the interoperability standards.
- **A test suite:** that can be used by implementers to verify conformance with the credential standards.
- **White Paper:** Research on conflict of laws to develop global trade of law.

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
<input checked="" type="checkbox"/>	Policy Recommendation	Public Review logs demonstrating all comments have been satisfactorily resolved; Final document ready for publication.
<input checked="" type="checkbox"/>	Business Requirement Specification	
<input type="checkbox"/>	Technical Specification	
<input checked="" type="checkbox"/>	White Paper	Final document ready for publication.
<input type="checkbox"/>	Green Paper	
<input type="checkbox"/>	Requirement Specification Mapping	
<input type="checkbox"/>	Core Component Business Document Assembly	
<input checked="" type="checkbox"/>	Guidelines	
<input type="checkbox"/>	Executive Guide	
<input type="checkbox"/>	Brochure	Final deliverable ready for publication.
<input checked="" type="checkbox"/>	JSON-LD vocabulary	
<input checked="" type="checkbox"/>	Credential Schema	
<input type="checkbox"/>	Message Schema	Final document ready for Bureau approval.
<input type="checkbox"/>	Internal UN/CEFACT Document	
<input checked="" type="checkbox"/>	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.
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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. Initial 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.

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:	Nancy.Norris@gov.bc.ca
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	<input checked="" type="checkbox"/>	1 month
Yes	Draft development	<input type="checkbox"/>	3 months (Very quick)
		<input type="checkbox"/>	6 months (Quick)
		<input checked="" type="checkbox"/>	12 months (Normal)
		<input type="checkbox"/>	18 months (Normal)
		<input type="checkbox"/>	24 months (Long)
Yes	Implementation Testing	<input checked="" type="checkbox"/>	9 months
Yes	Public Draft Review	<input checked="" type="checkbox"/>	12 months
Yes	Project Exit		1 month

Timeline	Deliverables
May 2023	Project Inception
June 2023	Call for Participation
July 2023 - January 2024	Business requirements, specification and sustainability criteria research conducted by workstreams with regular input from all contributors
February - August 2024	Development of the following deliverables: Draft Sustainability Vocabulary and Credential Schema, Test Suite, and Implementation Guide
September 2024 - June 2025	Early implementation by, and engagement with, stakeholders to test the above draft deliverables. Incorporation of feedback from stakeholders to refine vocabulary, schema, and test suite
July 2025 - June 2026	Finalization of draft deliverables and White Paper, including the public review period
April 2026	Final deliverables submitted to UN/CEFACT Secretariat for translation and adoption at the Plenary in June/July 2025
July 2026	Project Exit