Digital Measurement, Reporting and Verification (DMRV) Working Group

Terms of Reference

Background

Verra develops and manages standards that help countries, the private sector, and civil society achieve sustainable development and climate goals. Verra's flagship program - the Verified Carbon Standard (VCS) - allows independently assessed projects to turn their greenhouse gas emissions reductions into tradable carbon credits. Since its launch in 2006, the VCS has grown into the world's largest voluntary carbon credit program, registering over 1,750 carbon reduction projects worldwide that have reduced or removed more than 850 million tons of CO_2 equivalent from the atmosphere. Verra is a global leader in Agriculture, Forestry and Other Land Use (AFOLU) standards, with almost 350 AFOLU projects registered or in its pipeline across more than 35 countries. Verra also manages the Climate, Community & Biodiversity (CCB) Standards, and the Sustainable Development Verified Impact Standard (SD VISta).

Robust measurement, reporting, and verification (MRV) is crucial to credible carbon credit project development. For voluntary carbon programs like the VCS, MRV requirements depend on the project type and methodology. However, most projects are developed using a manual MRV process with various steps such as data collection, processing, calculations, reporting, and validation. Overall, MRV is currently a technically complex, time, and cost-intensive process that significantly affects project development feasibility and creates challenges in ensuring consistency between projects.

Research and development on MRV technologies have yielded several innovations and tools for improving transparency, lowering costs, and increasing automation and digitalization in the past decade. Further, many companies and carbon market stakeholders are currently developing tools, methods, services, and other innovations that will help support digital MRV (DMRV) in carbon credit projects. The term DMRV can apply to a broad range of technologies, tools, and applications. However, for programs like the VCS, DMRV can be defined as software solutions capable of automated data collection, processing, analysis, and generation of carbon credits, including validation and verification processes.

Key characteristics of DMRV that distinguish it from manual MRV include:

- Digitally native platforms that can receive data from a range of sensors and data sources, including manual inputs, and automatically analyze and process data using algorithms and advanced models
- Checkpoints and checklists within the platforms that ensure consistency and accuracy
- A platform that can be periodically certified[1] for use within specified project parameters This allows some project validation and verification procedures to be automated to streamline project development while ensuring integrity

The increased availability of DMRV technologies, coupled with growing demand for greater transparency in carbon credit project development, presents a significant opportunity to scale climate action by introducing technologies that help streamline VCS project development. As the world's leading and investor-trusted standard for certifying carbon emissions reductions and removals, the VCS is uniquely positioned to help foster innovation and the uptake of DMRV in a scalable way and attract private investment. Therefore, Verra is seeking the insights of experts with experience in MRV, software and information technology, and carbon project development to help identify and advance the main opportunities for effectively and efficiently bringing these new technologies and approaches into the VCS.

Objectives

The goals for the DMRV Working Group (WG) are to:

1. Identify digital MRV processes, technologies, tools, and innovations that can be used to support carbon credit project development; and
2. Explore barriers and opportunities (e.g., lower costs, increased transparency, improved efficiency, etc.) associated with the use of digital MRV systems in the VCS Program.

Scope of the DMRV WG

The DMRV WG will identify and help prioritize the most impactful actions Verra and partners can take over the next 12-18 months to implement DMRV systems. To begin its work, the WG will help define the most important topics, issues, and opportunities to assess in order to set priorities for enabling innovation and uptake of DMRV platforms. The following are potential topics and associated questions the WG may consider:

- **Barriers, challenges, and opportunities for implementing DMRV platforms across a range of project types**
    - What types of existing or emerging technologies, tools, and modelling (e.g., advanced remote sensing, machine learning and AI, IoT sensors, distributed ledger technology) could improve carbon credit MRV?

[1] Certified DMRV platforms would meet methodological and technical requirements to ensure accuracy and integrity of outputs. This would enable projects using the certified DMRV to be verified automatically.

- How could project proponents, developers, VVBs, and other stakeholders transition from current 'manual' MRV procedures to DMRV platforms?
- What are the key challenges and barriers to implementing DMRV in different stages of project development, including validation, verification, and credit issuance?
- What types of projects or project stages should be prioritized for DMRV platform development?
- How could Verra standards, programs, and methodologies align with fully digital MRV processes and platforms?

- **Guidance on the development, application, integration, and certification of DMRV platforms for VCS projects**
  - What guidance should Verra provide on DMRV platform development and use for VCS projects? This includes advice on digital methodologies, data collection, and other aspects of project development.
  - What rules should Verra develop for certifying or validating DMRV platforms? What restrictions should Verra place on the use of DMRV platforms? For example, should Verra allow DMRV platforms to be used outside of the conditions it was certified for, and if so, what limitations should be placed on this?
  - What guidance is necessary to reduce manual MRV processes and increase the use of automated MRV processes (i.e., automated data collection, calculations, algorithms)?
  - What guidance is necessary for project proponents and other stakeholders to combine DMRV and manual MRV processes?

- **Other DMRV design considerations**
  - How could DMRV platforms be designed to facilitate innovation and scaling of non-carbon benefits?
  - How could DMRV platforms be designed to support supply chain interventions in corporate GHG inventories?
  - How should DMRV platforms integrate with the Verra Registry and digital finance innovations (e.g., distributed ledger and blockchain products for carbon finance)?
  - How should Verra ensure transparency with DMRV platforms, particularly in the case of third-party proprietary technology that may be part of some platforms?

Structure of the DMRV WG

Verra anticipates inviting approximately 10-15 stakeholders to join the WG. Verra seeks applications from individuals with expertise in carbon and environmental science, software, and information technology, project development, auditing, and digital finance. More specifically, participants should meet one or more of the following criteria:

- Possess a strong understanding of challenges/opportunities associated with MRV in voluntary carbon credit markets
- Possess strong knowledge of current trends in technology use in carbon credit projects, including remote sensing, AI/ML, distributed ledger/blockchain, and other technologies

- Be familiar with existing voluntary and compliance carbon market standards and certification approaches and their strengths and weaknesses
- Possess strong knowledge of relevant new or emerging market and demand/finance opportunities and their requirements
- Be a potential user of new VCS Program rules, methodologies, or tools
- Be a leading player in the use of technologies for carbon markets and MRV

WG participants will be selected to maximize diversity in expertise, gender, age, and geography.

Applicants must commit a limited amount of time to contribute to the WG without remuneration. This will include occasionally responding to emails and remote participation in approximately six (60-90 minute) conference calls over a 6-month period between March 2022 and August 2022, with the possibility of extension if there is more work to do and the group wishes to continue. The total time commitment is estimated to be approximately 15-20 hours. This would include an estimated seven hours participating in meetings, eight hours reviewing concept notes and briefings, and five hours for individual consultations and correspondence with Verra staff. Verra aims to form the working group by 28 February 2022 and hold the first meeting in March 2022.

Verra will convene the WG. Verra staff will be responsible for preparing background documents, organizing input received from members, facilitating communication and consultation with other stakeholders as needed, and advancing outcomes. Verra may create smaller ad hoc groups to consider additional topics depending on needs and participant interest, availability, and expertise. The WG will provide guidance and advice to Verra but will not have decision-making power. The working language of the WG will be English.

Applications for membership in Verra's DMRV WG will be welcomed until 11 February 2022. To apply, please send a copy of your C.V. or resume and a brief statement of your interest and relevant expertise to Rishi Das (rdas@verra.org).