GLOBAL CARBON COUNCIL

Driving Climate Actions

GCC 2.0

Procedure for Approval of DMRV Solution Providers

V1.0 - 2025

CONTENTS

1.   Introduction

1.   The Global Carbon Council (GCC) Program is the **first international carbon market & sustainable development program** in the Global South, which is endorsed and approved/endorsed by the International Civil Aviation Organisation's (ICAO) for the CORSIA scheme and by the International Carbon Offset and Reduction Alliance (ICROA). The GCC Program is a voluntary carbon program and an initiative of the Gulf Organisation for Research and Development (GORD). The GCC Program receives GHG emission-reduction and removal projects from the entire world. The unique feature of the GCC Program is that it provides an opportunity to reduce or remove greenhouse gases and help to catalyze climate action on the ground, while ensuring that project construction and operations do not cause any harm to the environment and society, contribute to the United Nations Sustainable Development Goals as per host-country priorities and compliance to CORSIA, ICROA and Article 6.2 requirements. The details about the GCC Program are described in the 'GCC Program Framework' document[1].

2.   GCC Program encourages the use of D**igital Measurement, Reporting, and Verification (**DMRV) solutions for real-time monitoring of GHG emission-reduction and removal projects. DMRV solutions help in streamlining the carbon credit verification process, making the process of verification and issuance faster, flexible, accurate, and transparent to all stakeholders.

3.   GCC Program also acknowledges that DMRV Solutions and their integration into carbon Standards is still evolving area. DMRV solution providers across the world have an important role to play by providing the GCC Project Owners with solutions to enhance the efficiency of markets. Such DMRV providers can be listed with GCC, provided they are approved for their compliance with GCC specifications. This Procedure is focused on providing guidance to DMRV solution providers on the requirements to get themselves listed with the Program in order to offer their services to projects registered with the GCC Program.

2.   Purpose

4.   The purpose of this "Procedure for Onboarding of VVB Solution Providers" is to

(a) Establish key requirements of DMRV solutions to be eligible for approval under the GCC Program.

(b) Provide a procedure for application to the GCC program.

(c) Provide information on the GCC assessment process of DMRV solution providers

(d) Assess the performance of the DMRV provider over the period

(e) Provide information on the aim of integrating DMRV Solution into the GCC Program (e.g. aim to integrate DMRV components into the methodology, aim to provide DMRV solutions to projects).

(f) Provide information on the GCC Program's approach for inclusion of DMRV solutions

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[1] Link to our resource center page: https://globalcarboncouncil.com/how-gcc-works/resource-center/

(g) Provide a weblink for the list of approved entities that are qualified to provide DMRV solutions for projects submitted to GCC.

3. Entry into Force

5.   This document shall immediately enter into force on 01/09/2025

4. Definitions specific to this document

6.   The terms[2] used in this document are defined in the Program Definitions document and shall be referred to when applying this document.

7.   **Digital Measurement, Reporting, and Verification (**DMRV) involves solutions for real-time monitoring of GHG emission-reduction and removal projects. DMRV solutions help in real-time monitoring of project GHG performance and data collection, which results in streamlining the carbon credit verification process, making the process of verification and issuance faster, flexible, accurate, and transparent to all stakeholders

8.   For the GCC Program, a GCC **VVB** (Validation and Verification Body) refers to a third-party organization approved by the GCC Program to provide validation and verification services. A GCC VVB that performs validation services is termed a 'Validator', while one that conducts verification services is known as a 'Verifier'.

9.   The terms 'Validation' and 'Verification' Services are defined in the Program Definitions. Validation services encompass validation of project activity for registration, post-registration changes under the prior approval track, and renewal of the crediting period of the registered GCC project activity. Verification services, on the other hand, include verification of monitoring reports for issuance of ACCs, assessment of post-registration changes during monitoring periods under the issuance track, and verification of corresponding adjustments.

10.   For the GCC Program, a **GCC DMRV Certification agency** refers to a third-party organization approved by the GCC Program to certify the DMRV system to be adequate and complete with the measurement systems, Data acquisition system, and Data transfer mechanism to the GCC Program.

11.   For the GCC Program, a "**DMRV-Ready"** Project refers to a registered project under the GCC Program that applies a "DMRV-enabled methodology" which has been modified by the GCC Program with DMRV components and published under the "Approved Methodologies" list of the GCC Program.

12.   A **"DMRV System"** refers to the combination of Measurement/Monitoring devices (Meters, analyzers, switches, etc.) and the data acquisition system, which collects the primary data from the measurement/monitoring devices at the project site.

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[2] While using any GCC document, the terms/definitions/Acronyms and the names of the regulatory documents referred to have their first letter in capitals (e.g., Project Standard).

5.   Tracks for Application to GCC Program

13.   DMRV solution providers can apply to the GCC program[3] using two tracks as mentioned below.

(a)   GCC Project associated track. (Track-01)

(b)   Stand-alone Solution Provider track. (Track -02)

14.   The DMRV Solution Provider can apply for any of the following DMRV Sectoral Scopes of the GCC program.

(a)   DMRV Sectoral Scope #1: Energy sector (Generation, Transmission, Distribution, and Energy Efficiency) (Aligned to GCC GHG sectoral scopes #1,#2, and #3)[4]

(b)   DMRV Sectoral Scope #2: Industry Sector (Aligned to GCC GHG sectoral scopes #4, #5, #6, #8 & #9)[5]

(c)   DMRV Sectoral Scope #3: Transport Sector (Aligned to GCC GHG sectoral scopes #7)[6]

(d)   DMRV Sectoral Scope #4: Fugitive emissions and Solvents (Aligned to GCC GHG sectoral scopes #10, #11 & #12)[7]

(e)   DMRV Sectoral Scope #5: Waste Sector (Aligned to GCC GHG sectoral scopes #13)[8]

(f)   DMRV Sectoral Scope #6: Nature-based Solutions Sector (Aligned to GCC GHG sectoral scopes #14 & #15)[9]

(g)   DMRV Sectoral Scope #7: Technological Reduction/ Removal Sector (Aligned to GCC GHG sectoral scopes #16)[10]

15.   The Applicant DMRV Solution provider shall need to demonstrate capability in a project which covers the GCC GHG sectoral scope corresponding to the DMRV Sectoral scope as defined above. E.g., if a DMRV Solution Provider wants to apply for DMRV Sectoral Scope #3, they shall need to deploy their solution in a transport sector project which is covered under GCC GHG Sectoral Scope #7.

16.   The pictorial depiction of the two tracks for the purpose of capability demonstration is provided below.

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[3] If a DMRV Solution Provider is associated with a project applying a CDM/GCC methodology that has not adopted DMRV components, they are encouraged to approach GCC with their DMRV system details. GCC would take up the adoption and revision of the methodology to make them "DMRV-Ready" for the application of DMRV solutions.

[4] Ref Annex-01 of GCC 2.0 Procedure for Approval of VVBs (V4.0)

[5] Ref Annex-01 of GCC 2.0 Procedure for Approval of VVBs (V4.0)

[6] Ref Annex-01 of GCC 2.0 Procedure for Approval of VVBs (V4.0)

[7] Ref Annex-01 of GCC 2.0 Procedure for Approval of VVBs (V4.0)
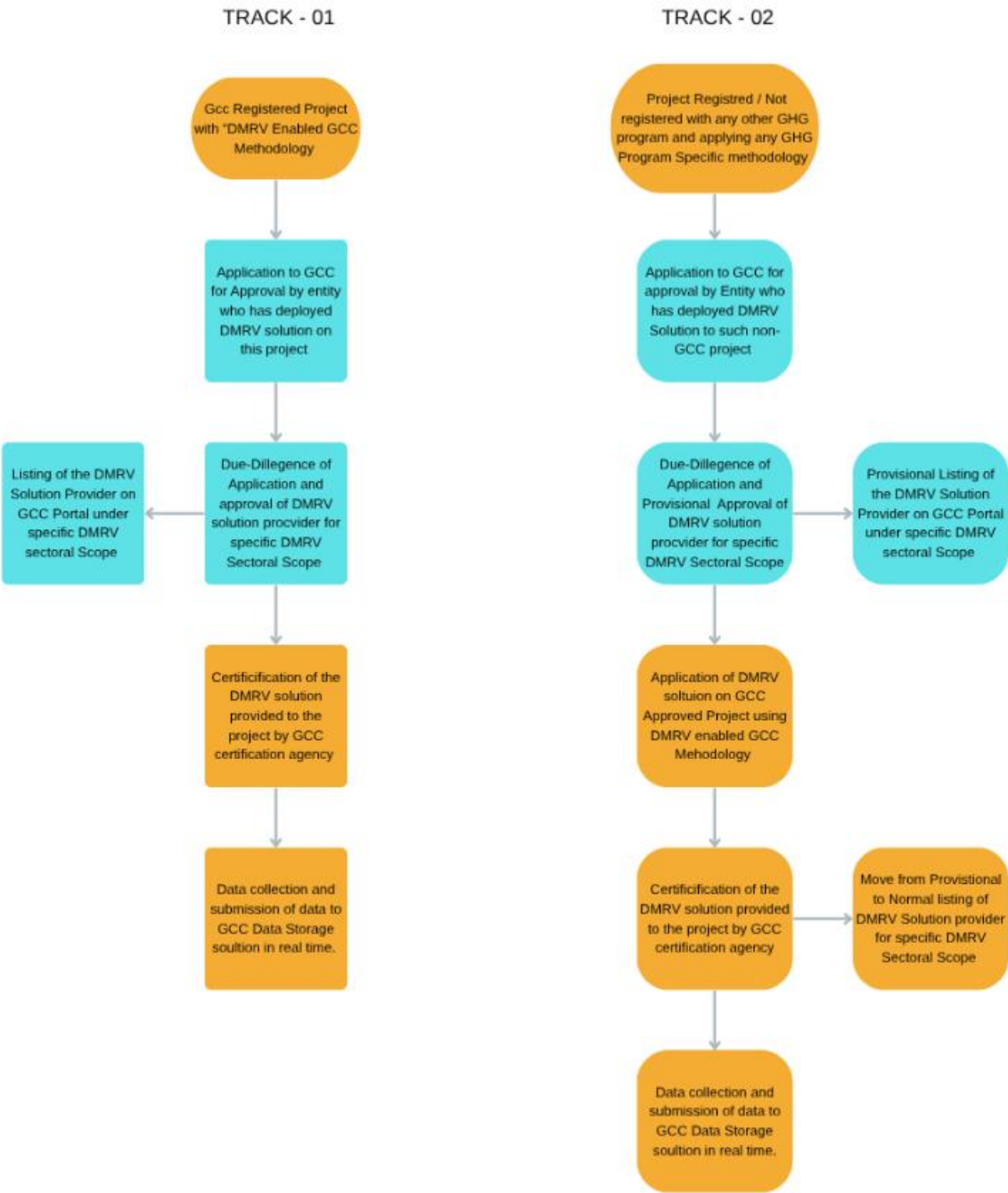
[8] Ref Annex-01 of GCC 2.0 Procedure for Approval of VVBs (V4.0)

[9] Ref Annex-01 of GCC 2.0 Procedure for Approval of VVBs (V4.0)

[10] Ref Annex-01 of GCC 2.0 Procedure for Approval of VVBs (V4.0)

TRACK - 01

```
Gcc Registered Project
with "DMRV Enabled GCC
Methodology
        ↓
Application to GCC
for Approval by entity
who has deployed
DMRV solution on
this project
        ↓
Listing of the DMRV  ←  Due-Dillegence of
Solution Provider on      Application and
GCC Portal under          approval of DMRV
specific DMRV             solution procvider for
sectoral Scope           specific DMRV
                         Sectoral Scope
        ↓
Certificification of the
DMRV solution
provided to the
project by GCC
certification agency
        ↓
Data collection and
submission of data to
GCC Data Storage
soultion in real time.
```

TRACK - 02

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Project Registred / Not
registered with any other GHG
program and applying any GHG
Program Specific methodology
        ↓
Application to GCC for
approval by Entity who
has deployed DMRV
Solution to such non-
GCC project
        ↓
Due-Dillegence of         Provisional Listing of
Application and            the DMRV Solution
Provisional Approval of → Provider on GCC Portal
DMRV solution             under specific DMRV
procvider for specific    sectoral Scope
DMRV Sectoral Scope
        ↓
Application of DMRV
soltuion on GCC
Approved Project using
DMRV enabled GCC
Mehodology
        ↓
Certificification of the   Move from Provistional
DMRV solution provided  → to Normal listing of
to the project by GCC     DMRV Solution provider
certification agency      for specific DMRV
                          Sectoral Scope
        ↓
Data collection and
submission of data to
GCC Data Storage
soultion in real time.
```

The Blocks shaded in "**Blue**" are covered under the present procedure.

6.   Application to GCC Program

17.   DMRV Solutions providers may apply to the GCC program with details of their proposed DMRV solutions using the application template[11] for approval in a specific DMRV Sectoral Scope.

18.   The Application to the GCC Program shall provide information on the DMRV solution being offered, including details on:

(a)   The GCC Project, where the solution has been offered (Track -01)

(b)   The applicable "DMRV-Enabled" methodology, which is applied in the project.

(c)   The Project wherein the solution is applied, including the methodology used in the project and the standard that the project has applied for registration (Track-02)

(d)   Overview of the DMRV Solution, including technologies applied for data collection, transfer, and validation, to deliver fast, reliable, verifiable data in the project

(e)   Details of the DMRV Solution are required to be submitted with a specific focus on the following:

(i)   Data points covered by the solution.

(ii)   Details on the technology employed for data collection and reporting

(iii)   Details on the data transfer Protocols and data management system, including the modalities of transfer of data from the primary measurement device to the acquisition software.

(iv)   Details on the risk assessment carried out and controls implemented to ensure accurate, tamper-proof, reliable, complete, and verifiable data from the project. Refer to the Appendix for an indicative list of risks and controls that need to be taken into consideration during the application.

(v)   Details on Data analytics and data validation in order to scrutinize data.

(vi)   Details on reporting protocols and transfer of data to the GCC central repository.

(vii)   Details on confidential data and how the same is handled in the system, including access control, access rights, and authentication information.

(viii)   Details on the systems built in for the protection of data.

(ix)   Details on legal, statutory, and regulatory requirements related to data from the geography where the project is located.

(x)   Details on incident reporting and response to security incidents.

7.   Initial review of application

19.   The GCC operations team shall access the application for completeness of the information provided in the application.

20.   If additional information is required, the GCC Operations team shall provide feedback to the DMRV Solution provider.

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[11] If the DMRV Solution Provider wants an NDA to be signed prior to disclosing their technology and deployment details, they may send it to GCC Operations (operations@globalcarboncouncil.com) for consideration.

8. Detailed review of the application

21. If the initial review process is found to be satisfactory, GCC Operations shall refer the application to a GCC DMRV Expert review team[12] for a detailed assessment.

22. A fee of 5000 USD is payable prior to the start of the Detailed review of the application. The invoice for the fee will be sent by the GCC Accounts team, and on receipt of the payment, the application will be forwarded for evaluation by the GCC DMRV Expert Review team.

23. In carrying out its assessment, the GCC DMRV Expert review team shall request a live demonstration of the DMRV Solution.

24. The GCC DMRV expert review team shall then assess the suitability and adequacy of the DMRV Solution in the mitigation activity area, including but not limited to those aspects mentioned below.

   (a) Data compatibility with GCC Standard requirements and alignment to a GCC "DMRV enabled" Methodology (if available)

   (b) Technology adopted and capability of the solution to provide accurate, tamper-proof, complete, reliable data for control mechanisms (Refer to Appendix-01 on the indicative list of risks and plausible control mechanisms)

   (c) Suitability and adequacy of the DMRV solution in terms of measuring instruments and IoT sensors, their specification, locations, QA/QC process, capability to trace changes in measuring instruments, etc.

   (d) Robustness of the data management system, including collection and transfer protocols of data.

   (e) Adequacy of Data encryption, data back-up, and eventualities in the event of loss of data.

   (f) Adequacy of data custodianship, user consent conditions, terms of use of data, and anonymity of data.

   (g) Capability of the solution to generate reports compatible with the requirements of the GCC Standard for the registration and issuance process.

   (h) Capability of the solution to monitor GHG as well as non-GHG parameters for the projects.

   (i) Adequacy of the assessment of information security risks, including potential consequences of the risks, likelihood of occurrences, and impact on the ER claims of the project.

   (j) Scalability of the solution to be assessed by checking if the solution can be applied to stand-alone projects / large utility-based systems only, or can be extended to distributed type community-based solutions as well.

   (k) Cost-effectiveness of the solution and how it aligns with the overall objective of ensuring fast and cost-efficient delivery of credits using the solution.

   (l) Study of details of 3rd party entities, like monitoring equipment and IoT sensor providers, network solution providers who are connected in the delivery process for the DMRV Solutions.

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[12] DMRV Expert review team would constitute of members from GCC Operations Team, GCC Regulatory team and external subject matter expert (if required)

25.   The GCC DMRV expert team shall access the DMRV solution and provide detailed feedback to the solution provider, including findings on the gaps identified in the process.

26.   The DMRV Solution provider may request further information on the findings from the GCC DMRV Expert team.

27.   DMRV Solution provider shall resubmit the application addressing the concerns raised by the GCC DMRV Expert team within a tentative timeline of 60 days from receipt of the feedback.

28.   A total of 3 iterations (including demonstration of upgraded DMRV solution) would be allowed between the GCC DMRV Expert team and the DMRV Solution provider. At the end of 3 iterations, the final recommendation shall be forwarded by the GCC DMRV Expert team to the GCC Expert Review Team.

9.   Outcome of Application

29.   The GCC Expert Review Team shall assess the findings of the GCC DMRV Expert team and recommendations therein and decide either of the following:

(a)   Approve the Application for recognition as a GCC DMRV solution provider for the specific DMRV sectoral Scope and the approved DMRV Service Provider can then provide their solution to registered / new GCC Projects (of the mitigation activity type/s corresponding to the DMRV Sectoral Scopes for which the DMRV solution provider is approved) which have registered in GCC Program or are seeking registration in the GCC Program. Upon approval, the details shall be published on the GCC Web portal along with technical specifications of the DMRV Solutions based on the approved configuration. The approval shall be valid for a 5-year period. The DMRV Solution Provider will need to reapply for re-approval after the end of the period for the next 5-year cycle.[13]

(b)   Reject the application for recognition as GCC DMRV Solution Provider and provide the reasons for the rejection communicated in generic terms to the applicant.

(c)   DMRV Solution Provider to reapply after addressing the comments received during the review process; in such cases, the process would start from the beginning.

10.   Performance Monitoring

30.   The performance of the Approved GCC DMRV Solution Provider shall be assessed on an ongoing basis post-deployment in GCC projects to ascertain the following.

(a)   The solution offered is being implemented as intended on the projects.

(b)   The solution offered is adequate to monitor all key elements in the project for real-time, accurate, fast delivery of credits while adhering to high integrity and quality as needed by the carbon markets.

(c)   If discrepancies or gaps are found during the ongoing assessment process, the services of the GCC DMRV Solutions Provider may be put on hold till further assessment and resuming of services.

(d)   In the case of serious discrepancies in the DMRV solution, which may have led to over-issuances during the preceding periods, the amount of issuance shall be adjusted against future issuances of credits to the project.

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[13] For DMRV solution providers applying under Track 02, the listing shall be under "Provisional DMRV Solution provider" category on GCC Website. Only on actual deployment on a GCC Registered project and certificate of the deployed "DMRV System" by a GCC Approved Certification Agency will they be migrated to the "DMRV Solution Provider" listing.

31. The GCC Operations Team shall continually conduct an evaluation of the performance of the DMRV Solution provider and monitor the nature of the DMRV system installed and data collected and reported as part of the program process.

32. The GCC Operations Team, based on the risk envisaged, may decide to conduct a spot-check of a GCC-approved DMRV Solution Provider at any time during the approval period. The purpose of the spot-check is to assess whether a DMRV Solution Provider still meets the specific requirements as stated in this document (in para 24).

33. The reason for a spot check could be:

    (a) A specific concern regarding the compliance of the DMRV Solution Provider with GCC requirements as stated in this document, or because of inadequate implementation of the DMRV System, resulting in errors in reporting or willful alteration or false reporting of data.

    (b) The spot-checks may also be triggered due to the relevant stakeholders' complaints, spot checks by the certification body, a delay in validation/verification of projects by VVBs, or inputs from external stakeholders.

    (c) A specific concern raised by the certification agency that certified the DMRV setup against the "Acceptance criteria of DMRV solution for GCC Program".

34. The outcome of the spot check may result in further investigation or submitting a complaint to the governance body of GCC for suspension/cancellation of the approval of GCC DMRV Solution Provider.

35. The GCC DMRV Solution Provider shall bear the costs related to such assessment including the man-day cost, visa fee, travel, lodging, and boarding of the assessment team chosen for such assignment.

36. The GCC Operations Team shall inform the GCC DMRV Solution Provider about the assessment plan for conducting spot checks, including the costs related to such assessment.

Appendix 01: Indicative list of Risks and Controls

Risks	Controls
Institutional Risks	
Roles and responsibilities are not clear	Roles and responsibilities would be clearly defined and allocated as per the organizational needs
Information security is not embedded in the project management process	Information security is one of the key aspects in project management.
Use of external databases and sources not clearly defined	Rules for use of external databases, requirements for regular updates, conditions for application of the same in the process, procedure for handling information to be clearly defined and implemented.
Return of assets and information on the termination of contract with the project is not clear	Personnel deployed in the process and interested parties are to return all organizational assets and data collected from the project that are in their possession on termination of the contract or change in employment contract, or agreement.
Proper labelling of information is not in place	All collected information is to be properly labelled along with a clear reference to the source and equipment from which the data originates in order to have traceability of data and transparency.
Data transfer protocols and procedures not clear or not in place.	Clear data transfer protocols are to be in place for all project-related data for all transfer facilities within the organization or between the organization and other parties.
Access rights not clearly defined	Access rights to all project monitoring devices, information from the same data transfer facilities to be clearly defined. There should be clear rules for provisioning, reviewing, withdrawing, and modification of the access rights
Clear responsibilities and protocols for data authentication and data alternation are not in place.	Ideally, once data is received from the primary device, it should be tamper-proof without any provision for alteration. A management system for authorization to alter data, authenticate data, and log them into the system to be in place with clear roles and responsibilities.
Insufficient/Improper information about 3rd party service providers and external agencies	All information related to 3rd party service providers / external agencies engaged in the project is to be logged into, but not limited to, roles and responsibilities and management systems with respect to equipment deployment, data handling, data authentication, and data transfer.
Clear protocols and controls with respect to Information and Communication technology (ICT)supply chain not in place	Clear Service Level Agreement (SLA) must be in place with all ICT supply chain. Data security risk with respect to ICT products and services of supply chain to be assessed, and proper control put in place
Information on security incidents not shared	Any security incidents related to primary measurement device, data storage device must be promptly reported, response documented and communicated to the Standard and DMRV Solution provider.
Evidence related to security incidents are not stored or shared	Identification, collection, preservation and communication of all evidence associated with any security incident to be as per procedure. They should be available to the DMRV solution provider and may be accessed by the Standard if needed.
Legal, statutory, regulatory requirement with respect to project equipment or data related protocols of the host country not complied with.	All legal, statutory, and regulatory requirements with respect to project equipment, data collection, and protocols related to the transfer of data must be known and complied with. DMRV Solution provider to be responsible for compliance with any Host country legal/statutory requirements.
Treatment of confidential / proprietary information is not proper.	Confidentiality or non-disclosure agreements required by the service provider to safeguard information/data must be clearly identified, documented, reviewed from time to time, and signed between parties.
Physical access to equipment, data acquisition hardware not properly defined	Access to primary devices (measurement as well as data acquisition devices) should be adequately protected with appropriate entry controls and access controls.

Maintenance of equipment is not proper	All maintenance-related requirements for all measuring devices and data acquisition devices to be clearly identified and adhered to. Information on the same must be available to the Standard for review.
End-of-life disposal protocol/reuse policy for all related hardware not clearly identified	All end-of-life disposal protocols for hardware installed as part of the project must be clearly documented and put into practice. A reuse policy must be encouraged to reduce waste generation from the project, and all disposal and re-use information to be made available to the standard for demonstration of environmental harm.
Back of information is not properly maintained in the project	All backup copies of information, software, and systems must be maintained and regularly tested in accordance with the policies and procedures of the DMRV Solution provider.

DOCUMENT HISTORY

Version	Date	Comment
V 1.0	31/08/2025	Approved version for uploading on the GCC portal

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