

ISO/IEC JTC 1/SC 24/WG 8 "Environmental representation"

Convenorship: BSI

Convenor: Mamaghani Farid Mr

**WG8 2021 Plenary and Working Session minutes**

Document type	Related content	Document date	Expected action
Meeting / Minutes	Meeting: VIRTUAL 19 Jul 2021	2022-02-06	INFO by 2021-07-19

Description

2021 SC 24 / Working Group 8 minutes of the online meetings

**ISO/IEC JTC 1/SC 24
Working Group 8
37th WG 8 Plenary Meeting
Minutes of Working Session, WG 8 Plenary, and Related SC 24
Meetings**

**On-line Meetings held via ISO Zoom
19 and 26 July 2021**

This document records the following meetings:

- WG 8 Working Session on Monday 19 July 2021
- WG 8 Plenary on Monday 26 July 2021
- Additional Items discussed during the Week

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1. References

The following documents are referred to in these minutes:

WG8 N0655: Minutes of WG 8 Meetings – online 2020

WG8 N0657: WG 8 Convenor's Report
SC24 N4524

WG8 N0658: SEDRIS Organization Liaison Report to SC 24 and WG 8
SC24 N4525

WG8 N0659: Convenor's slides for WG 8 Working and Plenary Sessions

WG8 N0660: Updates on 18024-5 SEDRIS C++ language bindings

WG8 N0661: Update on RIEDP Products and Standards

WG8 N0662: Presentation slides on SEDRIS to X3D Conversion (Implementation)

WG8 N0663: Presentation on SEDRIS XML Encoding

WG8 N0664: OKTAL-SE presentation on Important Capabilities to Standardize

WG8 N0665: WG 8 Recommendations to SC 24

SC24 N4532 – Australia NB Report

SC24 N4543 – China NB Report

SC24 N4546 – Japan NB Report

SC24 N4536 – Korea NB Report

SC24 N4537 – UK NB Report

SC24 N4531– USA NB Report

SC24 N4580: 2021 SC 24 Resolutions

1.1 URLs for Access to Documents

The following links allow access to the appropriate Document Registers.

The WG 8 documents are stored in the SEDRIS WG 8 Document Register, which may be accessed at:

[SEDRIS WG 8 Document Register](#)

WG 8 Documents are also stored on the ISO Document Register, which may be accessed via:
[ISO Document Register for SC 24/WG 8 documents](#)

All SC 24 documents are stored in the ISO Document Platform and may be accessed via:
[ISO Document Register for SC 24 documents](#)

2. Online WG 8 Working Session and Presentations

Monday 19 July 2021

21:00 UTC (Coordinated Universal Time)

Corresponding to:

07:00 – 09:00 Tuesday 20 July: Australia (East Coast)
06:00 – 08:00 Tuesday 20 July: Japan
06:00 – 08:00 Tuesday 20 July: Korea
05:00 – 07:00 Tuesday 20 July: Beijing (China Standard Time)
23:00 – 01:00 Monday/Tuesday 10/20 July: France
22:00 – 24:00 Monday 19 July: UK
17:00 – 19:00 Monday 19 July: USA (East Coast)
14:00 – 16:00 Monday 19 July: USA (Pacific)

The Revised/Final Agenda is given in [Appendix A](#).

Chair: Farid Mamaghani

Introduction

The attendees are shown in shown in [Appendix D](#).

2.1 Welcome and Introductions

Convenor welcomed everyone to the meeting and asked the attendees to introduce themselves.

The draft agenda that was posted prior to the meeting was reviewed and the Convenor noted a few changes to the agenda that included presentations that were either not available or would be given during the Plenary instead of the Working Session. The revised Agenda was adopted.

2.2 ISO Code of conduct at Meetings

The ISO Code of conduct (<https://www.iso.org/publication/PUB100397.html>) was shown and reminded before the start of the meeting.

2.3 Current and Anticipated Work Plan

Prof. Myeong Won Lee provided a verbal report on the project for 18041-5: EDCS language bindings – Part 5: C++, which was registered in June 2020. She reported that the standard is at Committee Draft (CD) stage and the CD ballot will close on 4 August 2021.

She also reported that a Working Draft (WD) for the project 18042-5: SRM language bindings – Part 5:C++ has been released and its work item proposal ballot will end on 9 August 2021.

Following these updates, Myeong Won gave a presentation that provided an update on the SEDRIS C++ language binding effort (18024-5), which is being developed (see **WG8 N0660**). She provided an overview of the work based on the current C++ SDK implementation and html documents available from the SEDRIS web site. She noted that the new work is similar to the SEDRIS C language bindings but adapted to C++, and that the work is progressing based on comments received during online meetings over the past year. See Myeong's slides on the

status of specific updates and changes from C to C++ for the various data types and functions.

Farid Mamaghani discussed why these language bindings are being produced, and noted that there is interest in developing converters to and from STF data, and the Korean NB would like to develop these in C++, and despite the fact that C++ SDK is available from the SEDRIS web site, there is interest in producing the C++ language binding standards for these, recognizing that the SEDRIS C++ binding will also have to depend on the EDCS and SRM C++ bindings.

Recommend to SC 24 to support progression of 18041-5 to DIS and 18042-5 to CD.

NWIP and associated WDs are being prepared for:

18024-5: SEDRIS Part 1 language bindings – Part 5: C++

Recommend to SC 24 to support the NWIP for SEDRIS C++ language bindings, and also support progression to CD if CD ballot text becomes available.

2.4 Update on SISO RIEDP Products and Standards (Farid Mamaghani)

Since Jean-Louis Gougeat was unable to attend the Working Session, Farid provided an update on the status of the development of the second Reuse and Interoperation of Environmental Data and Processes (RIEDP) product from SISO. The RIEDP requirements at some level are similar to those addressed by SEDRIS, but focus on use of existing formats to share data and limited only to terrain data and associated information. RIEDP leverages existing source data formats commonly used in GIS and simulation applications. RIEDP uses both concepts and standards from SEDRIS.

In the development of the RIEDP standards, the concepts from the SEDRIS DRM (Data Representation Model), entries from the EDCS, and several reference frames and conventions from the SRM have been used extensively. In addition, RIEDP standards also use and reference the SC 24 PNG standard.

RIEDP consists of two products. Product 1 is the RIEDP Data Model Foundations, a SISO Guidance Document, published in September 2018. Product 2 is the RIEDP Detailed Features Description, a SISO Standard, and is currently under development. Product 2 is nearing completion and will be released for SISO ballot in 2022.

To enable data and capabilities defined in a number of different industry formats to be interchangeable under a unified approach, RIEDP specifies semantics through attributes and attribution, uses innovative and efficient metadata constructs, provides data organization on media, and defines a set of profiles for specific application sub-domains. RIEDP also defines the concept of Feature Template that collects attributes common to all objects of a given type, e.g., trees, buildings, roads etc.

Further details are given in "Update on RIEDP Products and Standards", **WG8 N0661**.

The following comments were made in response to the presentation:

- Jack Cogman asked what parts of SEDRIS were related to RIEDP and/or used by it?
 - In RIEDP Product 1 (SISO-Guide-007, published in 2018), the SEDRIS DRM concepts are used within the RIEDP RADM, and specific reference frames and orientation conventions are used from the SRM. RIEDP Product 2, reuses many entries and concepts from the EDCS to specify feature and attribute relationships.
- Jean Latger asked whether animations (similar to those provided by such commercial tools as Blender) are supported in the RIEDP?

- Currently, RIEDP specifies the OpenFlight format for representing 3D models and associated animations of 3D parts. Therefore, the extent of animation use is inline with OpenFlight capabilities.
- Myeong Won Lee noted there are some similarities and overlaps between RIEDP and SEDRIS.
 - Yes, some of the concepts are similar, but there are also many differences, in both technical capabilities and market segments. The key differences and similarities are highlighted in some of the slides in the presentation that show what technical capabilities exist or are absent in each standard.
- Jean Latger noted that use of artificial intelligence (AI) and machine learning (ML) algorithms is a an area of interest and challenge for OKTAL-SE and its markets in France and Korea. There is a growing market for using AI/ML with synthetic data and imagery and for material extraction/recognition. Seeking joint work with other committees, such as SC 42, may be of value.
 - There are opportunities to leverage our standards with AI/ML standards in areas such as synthetic imagery generation/use. Since standards take a long time (many years) to develop, there can be a good opportunity to provide extensions of current standards to support such initiatives.

2.5 Presentation on an implementation for converting SEDRIS data to X3D (Myeong Won Lee)

Myeong Won presented a progress report on the conversion of SEDRIS data (in both STF and prototype XML-based formats) to X3D. She demonstrated a tool in development that is being built by using both X3D and SEDRIS SDK libraries and can also invoke the SEDRIS Model Viewer. It is planned that the tool can ingest SEDRIS data in STF and convert it to X3D data and also to the XML-based SEDRIS format that is under development. The tool is also planned to ingest that same XML-based SEDRIS format and feed the Model Viewer (for visual verification) as well as generate X3D files. She provided comparisons between existing STF databases viewed in the Model Viewer and the same data converted to the XML-based format and viewed in a separate viewer. She showed an analysis of the STF data as DRM class instances in UML and the same data in XML form. Details are provided in her presentation "SEDRIS to X3D Conversion (Implementation)", document **WG8 N0662**.

The following comments were made in response to the presentation:

- The reason for the green polygon showing in the viewer is that the conversion has not only processed the models from the Model Library, but also the polygon(s) under the Environment Root. This is why the Model Viewer only shows the models found under the Model Library.
- The XML encoding will need to develop a complete XML schema for the DRM first. Encoding just the instance contents of the classes in the DRM in XML form will not scale to converting more complex databases in automate manner.
 - The XML encoding ideas are further explained in the next presentation.

Recommend to SC 24 to support a possible new project on "Using X3D to portray SEDRIS data".

2.6 Presentation on XML-based encoding of SEDRIS data (Myeong Won Lee)

The possibility of generating SEDRIS data in an XML-based SEDRIS Transmittal continues to be of interest to the Korean National Body. Myeong Won presented an update on developing a standard for XML encoding of SEDRIS data. She presented slides on analysis details of various types of classes in the DRM and what would be needed to map these to an XML schema and encoding.

Details are provided in her presentation "SEDRIS XML Encoding", document **WG8 N0663**.

The following comments were made in response to the presentation:

- Presentation does a nice job analyzing the various data types used in DRM classes.
- Detailed analysis of what would be needed for an XML schema to define the various types of DRM classes is very useful.
- In XML encodings the order of objects and the conditional cases when an object or an attribute can appear can present challenges, when in UML this is not an issue.

Recommend to SC 24 to support a possible new project on "XML encoding of SEDRIS transmittals".

2.7 Report on TC 211 and SC 24 Meeting on Registry Standards (Farid Mamaghani)

Farid summarized the results of the informal meeting (see [slide 10](#) of **WG8 N0659**) in April 2021 between members of TC 211/WG 1 and members of SC 24 in which the approach to registration and the respective registry standards of the two committees were discussed. The meeting was an exploratory discussion on whether the two registration standards (ISO 19135-1:2015 and ISO/IEC 9973:2013) should be further reviewed for similarities and/or differences in approach, and whether a single more general standard should be created, or the two standards be mapped to each other, or the two standards should be left as-is. Formation of a possible ad hoc group between the two committees was also discussed during the meeting.

Recommend to SC 24 to support considerations for offering members to be part of an ad hoc group and discuss similarities and differences between the registration procedures and standards.

2.8 NGA Plans for Spatial Referencing (Farid Mamaghani)

Farid provided a verbal report that the US NGA (National Geospatial-Intelligence Agency) is interested in updating the SRM standard to Edition 3 (18026), to complete the rotation/orientation, similarity transformation, geodesics, and other content that were not finished in previous effort. It is anticipated that the work to produce Edition 3 will start in the next few months, and a new work item will be proposed once sufficient material has been developed that can be balloted. Work on SRM Edition 3 is considered important and will be added to WG 8 programme when it commences.

Recommend to SC 24 to support a New Work Item being raised to allow the completion of prior work on 18026 (SRM) Edition 3.

2.9 EDCS Registry

There have been no changes to the contents of the EDCS Class of items in the SC 24 Registry.

At the 2019 WG 8 meeting, it was reported that the download function that allows registry content to be downloaded in Excel or Access format was currently not available. This was raised as Action 35-01, but has not yet been resolved.

2.10 Current Status of Action items

The status of those action Items still open at the end of the 36th WG 8 plenary is as follows:

2.10.1. Action Items still open at end of 35th WG 8 Plenary in 2019

Action 33-01

Requirement:

Update the front page of the SC 24 Registry to enable additional classes to have links to their contents.

Current Status:

To implement the change, access to the SC 24 Registry site content is needed. As the SC 24 Committee Manager had such access rights on a previous occasion, this item will be followed up to see whether this is still the case.

Continuing

Action 35-01

Requirement:

Complete the updates to the EDCS Registry, such that the download function for contents of the Registry may be re-enabled.

Current Status:

The completion of this task is partial and will require additional software changes to the EDCS database processing, for which there is limited expert time. Therefore, it may have to be delayed.

Continuing

2.10.2. Action Items raised during this Meeting

No new actions were raised at the meeting.

The updated 2021 Action List is shown in [Appendix F](#).

2.11 Review of the planned WG 8 Work Programme

The CD for 18041-5 EDCS LB to C++ is in ballot and will close in early-August 2021.

NWIPs for 18042-5 SRM LB to C++, along with a WD, are currently in ballot and will close in mid-August 2021.

New work items for 18024-5 SEDRIS LB to C++, 18026 Edition 3, and other projects are anticipated, but have not commenced. The updated work schedule is shown in [Appendix E](#) and includes anticipated future work programmes.

2.12 Draft WG 8 Recommendations to be forwarded to the WG 8 Plenary

It was agreed that in the interest of time and based on recommended topics during the meeting, the Recommendations to SC 24 will be drafted prior to next week's Plenary and will be reviewed during that WG 8 Plenary meeting. The recommendations will include the following:

- The need for ISO to publish the correct version of EDCS LB to C (18041-4) Ed 3. As reported at the 2019 plenary meetings, EDCS LB to C, Ed 3 (18041-4) was published in May 2016 and yet the document issued by ISO is still the DIS text for Edition 3, even though it has a front cover referring to ISO/IEC 18041-4:2016(E).

- Make EDCS LB to C (18041-4) Ed 3 a publicly available standard
- To support the progression of work for 18041-5 to DIS
- To support the progression of work for 18042-5 to CD
- To support a New Work Item for and 18024-5 and 18026 (SRM) Edition 3
- To support the development of an XML encoding for SEDRIS transmittals
- Follow up with TC 211 on possible joint studies of registry standards
- Jean Latger to follow up potential liaison relation with SC 42

The final wording of the Recommendations was completed during the WG 8 Plenary.

2.13 Any Other Business

- None

The WG 8 Working Session concluded at approximately 00:08 UTC on 20 July.

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3. 37th WG 8 Plenary

21:00 UTC, Monday 26 July 2021

Corresponding to:

07:00 – 09:00 Tuesday 27 July: Australia (East Coast)
06:00 – 08:00 Tuesday 27 July: Japan
06:00 – 08:00 Tuesday 27 July: Korea
05:00 – 07:00 Tuesday 27 July: Beijing (China Standard Time)
23:00 – 01:00 Monday/Tuesday 26/27 July: France
22:00 – 24:00 Monday 26 July: UK
17:00 – 19:00 Monday 26 July: USA (East Coast)
14:00 – 16:00 Monday 26 July: USA (Pacific)

Chair: Farid Mamaghani

The attendees at the meeting are shown in [Appendix D](#). All attendees participated remotely via web conferencing.

The WG 8 Plenary Agenda is given in [Appendix B](#).

3.1 Welcome

The acting Convenor, Farid Mamaghani, welcomed attendees to the meeting.

3.2 Roll Call and Introductions

Each person attending the meeting introduced herself/himself.

3.3 ISO Code of Conduct at Meetings

The ISO Code of conduct (<https://www.iso.org/publication/PUB100397.html>) was shown and reminded before the start of the meeting.

3.4 OKTAL-SE Standardization Topics (Jean Latger)

The OKTAL-SE presentation was originally planned for the Working Session. However, since this was not possible, the presentation was postponed to the Plenary session. To alleviate some of the late hour (10 PM) in France, attendees agreed to change in the Plenary agenda and to move the presentation to the start of the Plenary meeting. Jean Latger's presentation "Examples of new SE features – important to standardize in the future" is provided in document **WG8 N0664**. Jean provided a brief introduction to OKTAL-SE, and then highlighted their work on Wang Tiling and Patches (procedurally-generated geo-typical data). He noted that procedural generation of terrain regions with appropriate textures/colors is valuable and saves time during the database generation process. However, in order to avoid the repetition of visual patterns, Wang Tiling is used to provide a more natural and smoother appearance of the terrain and its features. He added that connecting road networks into these Patches is not a problem when the proper rules are used, while it also allows having signs, parking lots, and other features. The approach is also tailored for different styles of cities/urban regions, depending on geographic and/or cultural characteristics. He showed examples of various Patches from different parts of the world, and noted that the approach also allows for rapid/real-time database creation. He noted that there is an opportunity to standardize dynamic procedural modeling for interoperability and normalization. The approach would apply to terrain and objects on the terrain, as well as geometry and materials. He added that a number of graphics/image generator companies are proposing solutions that is unique to them, but helps save disk space. And although current standards such as SEDRIS, RIEDP, or CDB have not fully addressed this topic area, it is a good opportunity to standardize.

The following comments were made in response to the presentation:

- Doug Stapleton asked whether there will be enough agreement on 3D mechanism to standardize?
 - Not sure about the question, although it is right that 3D solutions are not completely agreed by the community, because it is relatively new (in contrast to 2D).
- Farid Mamaghani summarized two points related to procedural generation of geometry and procedural generation of synthetic imagery for machine learning and material composition, and asked what standardization should/could be done for these.
 - These are areas that are ripe for normalization and standards. If not standardized, it will create interoperability difficulties in the community since there will be variations. Past examples in M&S, videogames, and simulators are such things as ray tracing that were very difficult at first but now are common. Same applies to generation and use of synthetic imagery to train machines.
- Myeong Won Lee agreed about use of AI/ML and SC 24 standards, and noted that if it is done properly we may find the need for liaison with SC 42 and appointing liaison officers.

Recommend to SC 24 to support possible liaison with SC 42 and appoint Jean Latger as liaison.

3.5 Minutes of the 36th WG 8 Plenary meeting in 2020 held online

The minutes of last year's Working Session and Plenary were reviewed. There were no comments, and the minutes were approved.

3.6 Convenor's Report

Jack Cogman and Farid Mamaghani gave a brief summary of the Convenor's Report document, which is given in document **WG8 N0657**. To access this document, go to [References](#). The Acting Convenor expressed gratitude to Jack for his 22 years of service and diligent work as the Convenor of WG 8, and his continuing support to both WG 8 and SC 24.

3.7 Summary of key topics from the WG 8 Working Session

Farid provided a summary of the following topics discussed during the Working Session on 19 July:

- **Status of Current Projects** (See 2.3)
 - C++ language binding ballots for EDCS and SRM in progress
 - C++ language binding for SEDRIS Part 1 in work (and WG8 N0660)
- **Overview of RIEDP concepts and its use of SEDRIS standards discussion on: market segments, use of animation, use of AI/ML** (See 2.4 and WG8 N0661)
- **STF to X3D conversion demonstration of initial viewer and converter tool being developed** (See 2.5 and WG8 N0662)
- **STF XML encoding progression of work on schema, representation of data types, and handling non-linear aspects of DRM relations with linear XML types** (See 2.6 and WG8 N0663)
- **Report on initial registry concept discussions between TC 211 and SC 24** (See 2.7 and WG8 N0659)
- **Verbal report on Future Plans for the SRM Standard** (See 2.8)
- **No change on EDCS Registry status** (See 2.9)

- **Systematic Reviews of standards** to be discussed during HoD/C
- **No new Action Items, and no changes to current open items**
- **Recommendations to SC 24** to be reviewed later in the session

3.8 National Body Reports

National body reports have been issued as the following documents:

SC24 N4532 – Australia

SC24 N4543 – China

SC24 N4546 – Japan

SC24 N4536 – Korea

SC24 N4537 – UK

SC24 N4531– USA

For access to these documents, go to [References](#)

3.9 Liaison Reports

3.9.1. SEDRIS

The SEDRIS Organization Liaison Report (**WG8 N0658 and SC24 N4524**) describes activities over the last 12 months. The SEDRIS Organization is a major contributor to the work of WG 8, but also contributes to the work of:

- WG 9 on Mixed and Augmented Reality (MAR) documents and standards. The need to clearly identify and provide focus for the problems being solved and solutions that have been implemented/tested has been emphasized.
- WG 10 on representing and visualizing smart cities and particularly supports the importance of this work.
- SC 24 initiatives and activities, including scope statements, planning and coordination of the 2021 SC 24 meetings in support of the US NB, refinement of the SC 24 Roadmap, representing SC 24 in JTC 1/AG 18 vocabulary discussions, participating in JTC 1/AG 13 on use of VR/AR technology in a variety of training and education applications.
- SISO RIEDP Products.
- SISO EDRS (Environmental Data Representation Standards) Product Support Group.
- Close cooperation with the US National Geospatial-Intelligence Agency (NGA).

To access the above document, go to [References](#)

3.9.2. SISO

There was no liaison report from the Simulation Interoperability Standards Organization (SISO).

3.9.3. Other

There were no other Liaison Reports.

3.10 Editors Reports

Editors' reports on 18041-5 and 18042-5 were provided during the Working Session (see 2.3).

3.11 Report from the Registry Rapporteurs

3.11.1. SC 24 Register – General

The entry point for the registries for SEDRIS part 1 and SRM are currently not linked to their corresponding register sites from the main SC 24 Registry site. This was raised as Action 34-03 at the 2018 Plenary in Toulouse, but has not progressed because access to the SC 24 Registry site has not been clarified.

Later during the meeting Jean Stride (Committee Manager) noted that in the coming weeks Jean will coordinate access to the SC 24 Register's web site and Charles Whitlock has access.

3.11.2. EDCS Registry

The EDCS Registry has about 300 new items to address. As these could not be resolved during the publishing of Edition 2 of the EDCS standard, a decision needs to be made to either eliminate the items or resolve them with the submitters, based on Edition 2 of the EDCS standard.

A problem with the content Download capability of the EDCS Registry as Access or Excel files has not yet been resolved.

In 2020, Louis Hembree noted that there have been changes to the use of some units for physical measures and that the registry and the standard need to be reviewed to ensure consistency.

3.11.3. SRM Registry

No items have been submitted.

3.11.4. SEDRIS DRM Registry

No items have been submitted.

3.12 Appointment of Registry Rapporteurs

The existing Registry Rapporteurs were re-appointed during the discussion of Recommendations to SC 24, with no objections, as shown below:

EDCS: Farid Mamaghani

SRM: Paul Berner

DRM: Farid Mamaghani

3.13 WG 8 Content of the SC 24 Business Plan Report for 2021-2022

Jack Cogman noted that the form/format has changed, and that WG 8 has new projects that need to be included. Myeong Won Lee noted that Business Plan has improved, and that the current WG 8 title does not need to change, but an updated ToR (terms of reference) needs to be included with the title. Jack asked Jean Stride (Committee Manager) whether any other changes are needed from WG 8 for the Business Plan. Jean Stride noted that only the title and ToR will be needed. Farid reminded that in the last several years, Jack Cogman has been the editor and focal point of the Business Plan for all of SC 24, and whether that is still expected. Myeong Won responded that she and Jean Stride will be collecting the content and preparing the business plan for the SC 24 Plenary.

3.14 Work Schedule

The table in [Appendix E](#) shows the current status of WG 8 standards, plus anticipated future work. The status and issues associated with Systematic Reviews will be discussed at the HoD/C meeting.

3.15 Recommendations to SC 24

The new or modified recommendations for 2021, identified at the WG 8 Working Session and during this WG 8 Plenary, were captured in the initial Draft of WG 8 Recommendations. Farid Mamaghani displayed the draft recommendations and reviewed and discussed each one. During the review, attendees provided comments and suggested corrections and/or changes that were captured as notes. Comments included a reminder from Peter Ryan about OKTAL-SE to be a liaison to SC 42, and question from Craig Rollins on liaison relationship with OGC related to GeoPose activity. On 30 July, the revised draft document was circulated to SC 24 leadership for review and incorporation into the SC 24 Resolutions document. Additional comments were received, which were incorporated into version 3 of the document and provided to the SC 24 Resolution Drafting Committee.

The recommendations file, containing 21 recommendations, was updated to produce the 2021 WG 8 Recommendations to SC 24, as given by **Document WG8 0665**. This document may be accessed via the links given in [References](#).

3.16 Action Items

3.16.1. Existing Open Items

The status of the existing Action Items was updated in Section 2.10 of the Working Session, as follows:

33-01: Continuing

35-01: Continuing

3.16.2. New Items

No new action items were raised at either the Working Session or Plenary meetings.

The updated action list is shown in [Appendix F](#).

3.17 Adjourn

The WG 8 Plenary concluded at approximately 00:013 UTC on 27 July.

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4. Other Related SC 24 Meetings

In addition to the WG 8 meetings, other meetings held during the week highlighted issues considered to be of interest to WG 8. A summary of these is provided in this section.

4.1 HoD/C Meetings, 21:00 UTC 12 July and 21:00 UTC 28 July

These meetings were also attended by Phil Wennblom (JTC 1 Chair). The following topics were discussed:

- **Revision of the Scope of SC 24**

After extensive discussions earlier in the year about the changes to SC 24 Scope, with both SC 24 members and members of SC 29, a revised text for the Scope was agreed upon. Resolutions of the 2021 SC 24 Plenary show the revised text of the scope statement.

- **Updates to the titles and terms of reference of SC 24 WGs**

Most WGs did not require a change to their titles; however, some WGs required a review and update of their terms of reference. The titles and terms of reference of all WGs, including WG 8, were reviewed, revised (if needed), and reaffirmed.

- **Creation of the SC 24 Chair's Advisory Group (CAG)**

A formal advisory group was established to replace the more ad hoc group for Roadmap and Terms. Membership of the SC 24 CAG will include authorized representative of each P member, SC 24 leadership (Committee Manager and WG Convenors), and authorized representatives of each Liaison Organization.

- **Systematic Review of SC 24 Standards**

Processing and response to systematic review of the standards were discussed, along with survey on use of specific standards that had not met the Systematic Review's Usage Criteria. Responses to the Systematic Review stemmed from lack of communication. Several of the standards that WG 8 maintains were identified as not used, but in fact the survey showed they were used. Closer attention and better communication will be required during systematic reviews.

- **SC 24 Publicly Available Standards and Horizontal Deliverables**

Both topics were discussed. WG Convenors will need to prepare the application form for ensuring previously-agreed publicly available standards will continue to remain in that status. Similarly, Convenors will need to identify any potential standards that should be recognized as Horizontal Deliverables. Several WG 8 standards are identified as Horizontal Deliverables and are applicable across domains, and all WG 8 standards since inception have been listed on ISO's Publicly Available Standards site; although in recent years the revision update to at least one language bindings standard (18041-4:2016) was not carried through and will need to be corrected.

- **Closer collaboration with SC 29 and Liaisons SC 42 and IEC/TC 100**

Closer collaborations, coordination, and communication separately with each of SC 29, SC 42, and TC 100 were discussed and encouraged.

- **Collaboration and possible joint work with TC 211 on Registration Procedures**

Collaboration with TC 211 on reviewing the similarities and differences between ISO 19135-1 and ISO/IEC 9973 were discussed and encouraged. A liaison statement will be prepared by SC 24 and sent to TC 211.

4.2 SC 24 Plenary, 21:00 UTC 4 August

The resolutions made at the SC 24 Plenary are recorded in:

Resolutions of SC 24 Plenary meeting 4 August 2021 (**SC24 4580**), which may be accessed via [References](#).

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Appendix A

WG 8 Environmental Data Representation On-line WG 8 Working Session 2021

Agenda

21:00 UTC (Coordinated Universal Time) Monday 19 July 2021

Corresponding to:

- 07:00 – 09:00 Tuesday 20 July: Australia (East Coast)
- 06:00 – 08:00 Tuesday 20 July: Japan
- 06:00 – 08:00 Tuesday 20 July: Korea
- 05:00 – 07:00 Tuesday 20 July: Beijing (China Standard Time)
- 23:00 – 01:00 Monday/Tuesday 10/20 July: France
- 22:00 – 24:00 Monday 19 July: UK
- 17:00 – 19:00 Monday 19 July: USA (East Coast)
- 14:00 – 16:00 Monday 19 July: USA (Pacific)

Chair: Farid Mamaghani

1. Welcome and Introductions
2. ISO Code of Conduct at Meetings
3. Adoption of Agenda
4. Current and Anticipated Work Plan:
 - 18041-5 EDCS LB to C++ (Myeong Won Lee / Richard Puk)
 - 18042-5 SRM LB to C++ (Myeong Won Lee / Richard Puk)
 - 18024-5 SEDRIS Part 1 LB to C++ (Myeong Won Lee)
5. Update on SISO RIEDP Products & Standards (Farid Mamaghani)
6. STF to X3D Conversion (Myeong Won Lee)
7. STF XML Encoding (Myeong Won Lee)
8. Report on TC 211 and SC 24 Meeting on Registry Standards (Farid Mamaghani)
9. SRM Edition 3 (Craig Rollins / Farid Mamaghani)
10. EDCS Registry
11. Current status of Action Items
12. Review of the WG 8 work programme
13. Status of Systematic Reviews of Standards
14. Draft recommendations to be forwarded to the WG 8 Plenary meeting

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Appendix B

WG 8 Environmental Data Representation On-line 37th WG 8 Plenary Meeting 2021 Agenda

21:00 UTC, Monday 26 July 2021

Corresponding to:

- 07:00 – 09:00 Tuesday 27 July: Australia (East Coast)
- 06:00 – 08:00 Tuesday 27 July: Japan
- 06:00 – 08:00 Tuesday 27 July: Korea
- 05:00 – 07:00 Tuesday 27 July: Beijing (China Standard Time)
- 23:00 – 01:00 Monday/Tuesday 26/27 July: France
- 22:00 – 24:00 Monday 26 July: UK
- 17:00 – 19:00 Monday 26 July: USA (East Coast)
- 14:00 – 16:00 Monday 26 July: USA (Pacific)

Chair: Farid Mamaghani

1. Welcome and introductions
2. ISO Code of Conduct at Meetings
3. OKTAL-SE Standardization Topics (Jean Latger)
4. Approval of the minutes of the 36th meeting held online 2020
5. Convenor's report
6. Summary of key topics from the Working Session
7. National Body reports
8. Liaison reports
 - SEDRIS
 - SISO
 - Any other liaison reports
9. Editors reports
10. Reports and Appointment of registry rapporteurs
 - EDCS
 - SRM
 - SEDRIS
 - Recommendation for TC 211 & SC 24 effort on Registry Standards
11. Summary of WG 8 content in the draft SC 24 Business Plan for 2021-22
12. Work Schedule and Status of Systematic Reviews
13. Review and approval of WG 8 Recommendations to SC 24
14. Review action items
15. Adjourn

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Appendix C – SC 24 Meeting Plan

Meeting Schedule for the 2021 Online SC 24 and Working Group Meetings

12 July - 4 August 2021 (UTC)

	Group	Meeting Duration	UTC	ZOOM Info
Week 1	HoD/C (SC 24 state) Meeting	3hrs	Mon, 12-Jul, 21:00	https://iso.zoom.us/j/95915594770?pwd=VzdNWklaT003NUR2MndXSzFubk1rQT09
	WG 10 Working Session	2hrs	Tue, 13-Jul, 12:00	https://iso.zoom.us/j/95623755577?pwd=bWtxak1Vdk9EcEdaTXhsM0Foc1ZVdz09
	WG 6 Working Session	2hrs	Tue, 13-Jul, 22:00	https://iso.zoom.us/j/93081569583?pwd=Q053UIVvWkRWNIRCNVloRVNsdFIGZz09
	WG 6 - JWG 16 Joint Session	2hrs	wed, 14-Jul, 14:00	https://iso.zoom.us/j/94011482683?pwd=WWtkYTViOJMZXd3cGR3MmEvYVVmQT09
	WG 11 Working Session	2hrs	Thu, 15-Jul, 13:00	https://iso.zoom.us/j/93890985928?pwd=U3YrNDIFcFBwUDJ1MTloRIRhdER5Zz09
	WG 7 Working Session	2hrs	Fri, 16-Jul, 12:00	https://iso.zoom.us/j/97112130180?pwd=TjdUOFAYtkMrNnBuemZISTU5UkFoUT09
Week 2	WG 8 Working Session	2hrs	Mon, 19-Jul, 21:00	https://iso.zoom.us/j/96706310935?pwd=ek9SSEnzTDJCeENmWHlvd202Q01EQT09
	WG 9 Working Session	2hrs	Tue, 20-Jul, 21:00	https://iso.zoom.us/j/99631470937?pwd=T0tNVUc2RmQwb213T0paT3lrY3lJZz09
	WG 11 Plenary	2hrs	wed, 21-Jul, 13:00	https://iso.zoom.us/j/97554558273?pwd=OFJISWRBejN5cDgxNUtaNU5ncW1mUT09
	WG 6 Plenary	2hrs	wed, 21-Jul, 22:00	https://iso.zoom.us/j/99396406078?pwd=ZVRQMERJb3VTWUhhkbc2Y0hScThlQT09
	WG 10 Plenary	2hrs	Thu, 22-Jul, 12:00	https://iso.zoom.us/j/92832952691?pwd=TmpJTTg2eVo5aUYxODFoamdPRmxRZz09
WG 7 Plenary	2hrs	Fri, 23-Jul, 12:00	https://iso.zoom.us/j/96844345563?pwd=TIlwZUI5RXBKVWNVN09lWjNEU1FWQT09	
Week 3	WG 8 Plenary	2hrs	Mon, 26-Jul, 21:00	https://iso.zoom.us/j/91722451816?pwd=VIZkZXprUmhtaTZISGkxNTRVQWhXUT09
	WG 9 Plenary	2hrs	Tue, 27-Jul, 21:00	https://iso.zoom.us/j/94909206393?pwd=SEZQZnh1RnNldENEV3ArRjViNkozQT09
	HoD/C	2hrs	wed, 28-Jul, 21:00	https://iso.zoom.us/j/92099412327?pwd=NjBvb00vYVJsQkYJRDIIVkVYY29CUT09
Week 4	Drafting Committee	5hrs	Mon, 02-Aug, 21:00	https://iso.zoom.us/j/94870482368?pwd=UFYzT2NIeXB1S3RkaVV5TEt6bDRkdz09
	Roadmap	2hrs	Tue, 03-Aug, 21:00	https://iso.zoom.us/j/98441967976?pwd=VFY0Mnd2ZGM1OWc3T2drV2xrdFJ5dz09
	SC 24 Plenary	3hrs	wed, 04-Aug, 21:00	https://iso.zoom.us/j/92859344178?pwd=RDhDMG82TXBSSONQbW5JYkINaXpYZz09

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Appendix D
List of Attendees

2021 SC 24/ WG 8 Online Meetings

	Affiliation	E-mail	WG 8 Working Session	WG 8 Plenary
			All attendance was remotely via Zoom	
SC 24 Officers				
Myeong Won Lee	SC 24 Chair, Suwon University	myongwonlee@gmail.com	x	x
Jean Stride	SC 24 Secretary, BSI	jean.stride@bsigroup.com		x
Australia				
Peter Ryan	DSTO, Australia	peterryan2005@hotmail.com	x	x
Doug Stapleton	Highlands Information Security, AU	doug.stapleton@hinforec.com.au	x	x
China				
Xiaojun Gu	SAC China	guxiaojun1@huawei.com	x	
Zhao Hongliang	SAC China	zhaohl@cesi.cn	x	
Korea				
Kwan-Hee Yoo	Chungbuk University	khyoo@chungbuk.ac.kr		x
Japan				
Takeshi Kurata	AIST, Japan	t.kurata@aist.go.jp		x
UK				
Jack Cogman	Datasim, UK	jack.cogman@datasim.net	x	x
Charles Whitlock	BSI, UK	charles.whitlock@bsigroup.com		x
US				
Dick Puk	Intelligraphics, WG 6 Convenor	puk@igraphics.com	x	x
Jason Smith	L3Harris Corp.	jason.smith@harris.com	x	x
Rob Cox	US DoD PEO STRI	robert.m.cox14.civ@mail.mil	x	x

Craig Rollins	US DoD NGA	craig.m.rollins@nga.mil		x
SEDRIS LO				
Paul Berner	SEDRIS Organization	sedris_pdb@verizon.net	x	x
Jean Latger	OKTAL-SE, SEDRIS Organization	jean.latger@oktal-se.fr	x	x
Farid Mamaghani	SEDRIS Organization	farid@sedris.org	x	x

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Appendix E

WG 8 Work Schedule – Showing only the events that have occurred since 2014

Standard	WD	CD PDAM PDTR	DIS FPDAM	FDIS FDAM DTR	IS/TR
EDCS Amendment 1 initially, then changed to Edition 2 18025	Approved Oct 08	PDAM Aug 11	DIS Sep 12	FDIS Oct 13	Ed 2: 2014 2014-02
EDCS LB to C Ed 3 18041-4	NWIP 14 Jun 13	CD 14 Jun 13	DIS 15 Nov 15		Ed 3: 2016 2016-05-27
SRM Edition 3 18026	Approved Feb 09	CD Aug 11	DIS Oct 12	FDIS Cancelled Q2 2014	(Ed 3) NWIP to be raised
EDCS LB to C++ 18041-5	WD 30 Jun 20	CD May 20	DIS Dec 21	FDIS Apr 22	IS Oct 22
SRM LB to C++ 18042-5	WD 17 May 21	CD Nov 21	DIS Nov 22	FDIS Mar 23	IS Sep 23
SEDRIS LB to C++ 18024-5	In Preparation				
SRM Edition 3 18026		Planned			

SRM LB to C Ed. 1 Amendment 2 18042-4	NWIP when SRM Ed 3 published				
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 = Completed

Abbreviations

NWIP: New Work Item Proposal

CD: Committee Draft

PDAM: Preliminary Draft Amendment

PDTR: Preliminary Draft Technical Report

DIS: Draft International Standard

FPDAM: Final Preliminary Draft Amendment

FDIS: Final Draft International Standard

FCD: Final Committee Draft (No longer used)

FDAM: Final Draft Amendment

DTR: Draft Technical Report

IS: International Standard

TR: Technical Report

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Appendix F
Action Items
ISO/IEC JTC 1/SC 24/WG 8
37th WG 8 Plenary
Held online, 19 and 26 July 2021

This table shows only those Action Items that were still open at the end of the 37th WG 8 Plenary on 2021-07-26. Shaded areas indicate action items that have been closed since then.

No.	Action Item	Assigned to	Due	Done	Comment
33-01	Update the front page of the SC 24 Registry to enable additional classes to have links to their contents. In particular, the capability is required to: <ul style="list-style-type: none"> • Add registered items for SEDRIS – Part 1 • Add registered items for SRM 	F. Mamaghani, C. Whitlock	April 2021		2018-08-09: Continuing 2019-08-29: Continuing 2020-08-10: Continuing 2020-12-04: On reviewing Action 34-03, it was realized that adding registered items for SEDRIS-Part 1 and SRM are specific examples of this requirement. They have therefore been included as part of this action. 2021-07-26: To implement the change, access is required to the SC 24 Registry site content. As the SC 24 Committee Manager had such access rights on a previous occasion, we will follow up to see whether this is still the case. Continuing

No.	Action Item	Assigned to	Due	Done	Comment
35-01	Complete the updates to the EDCS Registry, such that the download function for contents of the Registry may be re-enabled.	F. Mamaghani, J. Cogman	August 2020		<p>2019-08-28: Raised at the 2019 WG 8 Working Session Continuing</p> <p>2020-08-10: Continuing</p> <p>2021-07-26: The completion of this task is partial and requires additional software changes to the EDCS database processing, for which there is limited expert time. Therefore, it may have to be delayed. Continuing</p>

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