August 4, 2023
Japan Electronics and Information Technology Industries Association (JEITA)

To: Media representatives

Green x Digital Consortium succeeds in joint POC experiment with 32 companies on CO_2 data linkage in a virtual supply chain, lends momentum to supply chain CO_2 data visualization

The Green x Digital Consortium, for which the Japan Electronics and Information Technology Industries Association (JEITA; chaired by Keiji Kojima, President & CEO, Hitachi, Ltd.) serves as secretariat, today announced the success of its proof-of-concept (POC) experiment with CO_2 data linkage in a virtual supply chain, aimed at realizing supply chain CO_2[*1] data visualization. This was the first experiment to be conducted in Japan with an eye to global-level cross-industry CO_2 data exchange. Its success will lend momentum to utilization of the CO_2 data calculation method and technical specifications created by the Consortium, helping to realize CO_2 data visualization throughout the supply chain.

The whole experiment comprised two phases, with Phase 1 in January 2023 successfully testing CO_2 data linkage across different solutions. Phase 2, which we just completed, brought in 32 companies to test aspects such as actual CO_2 data calculation by solution users. Specifically, we built a virtual supply chain consisting of three layers—materials, processed materials, and products—taking a computer as our product. We then allocated the participating companies to the respective layers and had them perform CO_2 data calculations using the CO_2 Visualization Framework created by the Consortium's Visualization Working Group (led by Kōichi Inagaki, NEC Corporation) and then exchange CO_2 data among solutions based on the Tech Specs toward Data Exchange.[*2] By calculating CO_2 data for all elements from materials through to the final product and passing that data among different companies and different solutions, we succeeded in visualizing the CO_2 data for a final product based on a shared understanding among all the companies in a supply chain.

Through Phase 2, we demonstrated that even if the multiple companies making up a supply chain use different CO_2 data visualization solutions, as long as they use the same method and format—the same language, as it were—to calculate CO_2 data, multiple solutions can be linked to enable CO_2 data to be transferred from upstream to downstream in a supply chain. We look forward to the widespread uptake of the CO_2 Visualization Framework and Tech Specs toward Data Exchange used in the experiment increasing the number of options for user companies when introducing solutions, as well as eliminating the need for solution providers to align their solutions to individual companies and thereby enhancing their development efficiency, contributing to the early realization of CO_2 data visualization in the supply chain.

Looking ahead, we will use the findings from the POC experiment to update the CO_2 Visualization Framework and Tech Specs toward Data Exchange as frontrunning initiatives designed for ease of use by as many companies as possible, while ensuring the global-level interoperability of these. To that end, we will also strengthen our partnership with the international framework WBCSD Partnership for Carbon Transparency (PACT)[*3], Further information will be released as work proceeds.

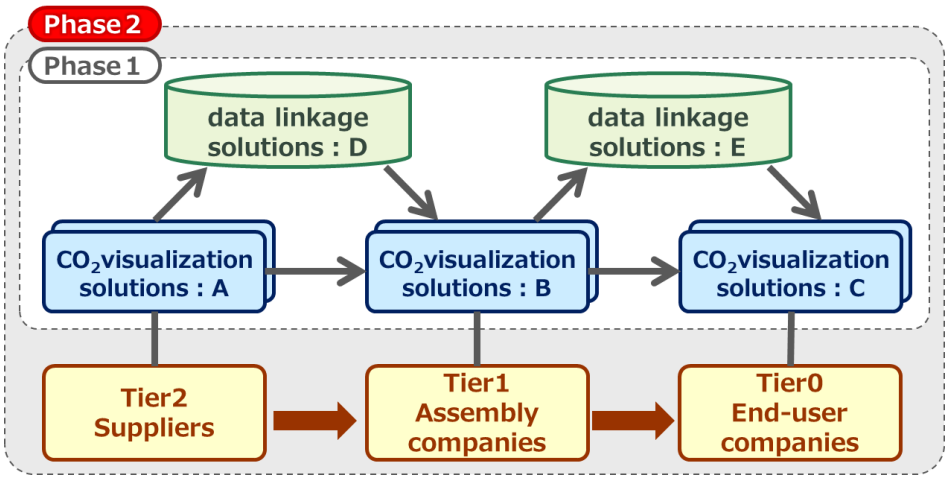
Final Report on POC Experiment Phase 2: https://www.gxdc.jp/pdf/report02.pdf

*1 CO_2 data
Refers in the press release and in the CO_2 Visualization Framework to CO_2-equivalent greenhouse gas emissions (expressed as kg CO_2e, etc.) as stipulated by the IPCC. Includes greenhouse gases other than carbon dioxide.

*2 Carbon visualization framework and technical specifications for data exchange
The carbon visualization framework comprises a document outlining a methodology for using data technologies to calculate and share carbon data (disclose data quality) exchanged within the supply chain with the aim of realizing carbon data distribution based on primary data that reflects supplier companies' emissions reduction efforts. The technical specifications incorporate the approaches of the WBCSD PACT's Pathfinder Network and Pathfinder Framework along with unique elements based on Japan's domestic systems and the needs of companies participating in the Consortium. Preparations are currently underway to disclose the framework and the specifications to the general public.
Carbon visualization framework:
https://www.gxdc.jp/pdf/CO2_VisualizationFrameworkEdition_1.0_en.pdf
Technical Specifications for Data Exchange:
https://www.gxdc.jp/pdf/data02.pdf

*3 WBCSD Partnership for Carbon Transparency (PACT)
The World Business Council for Sustainable Development comprises a coalition of CEOs from around 200 companies aiming to realize sustainable development. The WBCSD is the main convener of the GHG Protocol. PACT was set up under the auspices of the WBCSD to boost emissions transparency in the value chain and accelerate decarbonization. It defines the necessary methodologies and technical specifications for emissions data exchange, which it releases in the form of the Pathfinder Framework and the Pathfinder Network Technical Specifications. The Green x Digital Consortium participates in the PACT ecosystem.
Website: https://www.carbon-transparency.com/

<POC image>



- **Phase1 : Testing interoperability between different solutions** (until January 2023)
  ※Using Pathfinder Network-based data items and API specifications
- **Phase2 : Testing assumed use cases including data acquisition, calculation, utilization, accuracy verification, etc.** (until June 2023)
  ※Exchanging product/organization level data based on "CO2 visualization framework" developed by Green x Digital Consortium
  ※Testing with Solution Users

Companies that will participate in the POC experiment Phase 2 (32 companies)
(Asterisked companies are both solution providers and users.)

Project Manager : FUJITSU Limited, Mizuho Research & Technologies, Ltd.
PMO : Ridgelinez Limited
Solution Providers : ABeam Consulting Ltd.
Asuene Inc.
booost technologies,Inc.
chaintope Inc.
Deloitte Tohmatsu Consulting LLC
FUJITSU Limited*
Hitachi Solutions, Ltd.
Hitachi, Ltd.*
NEC Corporation*
Nomura Research Institute,Ltd.
NTT DATA Group Corporation*
Oracle Corporation Japan
PID Inc.
SBI R3 Japan Co., Ltd
Suzuyo Shoji CO.,LTD
TOSHIBA CORPORATION*
WingArc1st Inc.
Zeroboard Inc.
Solution Users : AISIN CORPORATION
BROTHER INDUSTRIES ,LTD.
Canon Inc.
Dai Nippon Printing Co., Ltd.
FUJITSU Limited*
Hitachi, Ltd.*
Honda Motor CO.,Ltd
Kawasaki Heavy Industries, Ltd.
MITSUI & CO., LTD.
Mizuho Research & Technologies, Ltd.
NAGASE & CO.,LTD.
NEC Corporation*
Net One Systems Co., Ltd.
Nitto Denko Corporation
NTT DATA Group Corporation*
Sumitomo Electric Industries, Ltd.
TOSHIBA CORPORATION*
Unicharm Corporation

Green x Digital Consortium
The Consortium was established in October 2021 to help realize carbon neutrality by 2050 through the digitalization of environment-related fields and the creation of new business models. It promotes collaborative creation among Consortium members on themes such as visualization of CO2 emissions in the supply chain and the introduction of renewable energies. The Consortium is headed by Professor Noboru Koshizuka (Graduate School of Interdisciplinary Information Studies, The University of Tokyo) and has 155 members (as of August 4, 2023).
Website: https://www.gxdc.jp/

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