GOSAT-GW TANSO-3 Data Policy

(Date) March 18, 2025

National Institute for Environmental Studies Global Environment Bureau, Ministry of the Environment of Japan

1. Purpose

This document sets forth the terms and conditions for the provision and use of data collected by the Total Anthropogenic and Natural emissions mapping SpectrOmeter-3 (hereinafter "TANSO-3") onboard the Global Observing SATellite for Greenhouse gases and Water cycle (hereinafter "GOSAT-GW") based upon the Agreement on the Development, Operation and Use of GOSAT-GW concluded on November 11, 2019 between the Japan Aerospace Exploration Agency, the Global Environment Bureau of the Ministry of the Environment of Japan, and the National Institute for Environmental Studies (hereinafter "NIES").

2. Basic policies

- (1) The products generated from data collected by GOSAT-GW TANSO-3 (hereinafter "TANSO-3 products") are distributed on a non-discriminatory basis as provided for in the United Nations Principles Relating to Remote Sensing of the Earth from Space.
- (2) TANSO-3 products are promptly processed with the help of collaborators in and outside of Japan, and are widely provided to promote their use.
- (3) In order to carry out the GOSAT-GW greenhouse gas observation mission (hereinafter the "Mission"), the Ministry of the Environment of Japan (hereinafter "MOE"), and NIES (hereinafter collectively the "Two Parties") give utmost consideration to fulfilling their respective roles as specified in the following items.
 - MOE contributes to improving the accuracy of TANSO-3 products through Level 1 data processing, and further contributes to environmental administration by promoting the use of TANSO-3 products for research and development for greenhouse gas emission monitoring and verification, as well as for global warming countermeasures in various countries.
 - ii) NIES contributes to deepening the scientific understanding of the spatial distribution of greenhouse gases, air pollutants and related substances, and the global carbon cycle, as well as to improving the accuracy of future climate predictions through the high level processing of GOSAT-GW data, the validation of processing results, and the distribution of GOSAT-GW products and promotion of their use. Concurrently, NIES develops satellite-based technology to improve accuracy in verifying the greenhouse

gas emissions inventories of each country thereby contributing to MOE's global warming-related measures.

3. Definitions of product types and categories

TANSO-3 products provided by NIES are listed in Table 1. TANSO-3 products are processed at progressive levels; Level 1 products have physical quantities converted from voltage and current values measured by TANSO-3 and Level 2 products are processed from Level 1 products and include column abundances of greenhouse gases. TANSO-3 products are also classified into three product categories: standard, research and internal, as described below.

(1) Standard products

Standard products are Level 1 or Level 2 products that are routinely generated and made available to the public, with the documentation on their algorithms, formats, and results of accuracy assessment¹) open to all users.

- 1) Accuracy assessment here refers to assessing the accuracy of certain physical quantities stored in TANSO-3 products using data acquired by independent observation instruments with a higher accuracy (calibration/validation) or using data by independent observation instruments/models with a similar accuracy (comparison).
- (2) Internal products

In principle, internal products are used only within the Two Parties and are not available to the public.

4. User categories

The user categories of TANSO-3 products are shown in Table 2.

5. Product distribution method

In principle, NIES distributes TANSO-3 products to users online. Each user enters into an agreement, a contract, online terms and conditions, or other agreement process with NIES, and shall comply with Article 8. Terms and conditions for data use.

6. Expenses associated with product delivery

NIES provides TANSO-3 products to users free of charge; however, in the event of any additional expenses incurred in providing products, NIES may charge such users the actual cost thereof.

7. Rights to TANSO-3 products

- (1) MOE and NIES shall hold all intellectual property rights to all TANSO-3 products, related documents and works created by MOE or NIES and provided through NIES; however, this shall exclude intellectual property rights held by third parties.
- (2) When a user creates high-level value-added data/products²⁾ based on TANSO-3 products, the Two Parties will not exercise the copyrights they hold (the rights as the copyright

holders of the primary products) to said high-level value-added data/products, and the user may use the high-level value-added data/products under the copyrights held by the creator of the data/products.

- 2) High-level value-added data refers to data that has been modified through advanced data processing (e.g., data analysis or the combination of data from several satellites, image processing based on external information other than the data, or the conversion of physical quantities) and is irreversible to the original data.
- 8. Terms and conditions for data use
 - (1) Any use of TANSO-3 products contrary to peaceful purposes is prohibited.
 - (2) Users shall include any one of the following source attributions when publishing results achieved using TANSO-3 products:

NIES/MOE

National Institute for Environmental Studies/Ministry of the Environment of Japan

When creating high-level value-added data/products based on TANSO-3 products and providing any third party with such data/products (including publications), the user shall also indicate that NIES and MOE are the providers of the original data. However, if it is difficult to indicate the source for each item, such as when publishing academic papers or when releasing materials under the Paris Agreement, the user shall indicate the source information at the end of the document or in an appropriate place.

- (3) Users may redistribute TANSO-3 standard products to third parties; however, this shall be limited to the standard products already published by the Two Parties. In such cases, the distributor shall ensure that the recipients of the products comply with the GOSAT-GW TANSO-3 Data Policy (hereinafter the "Data Policy"). Users shall not use any other TANSO-3 products for purposes other than those agreed upon with the Two Parties and shall not redistribute them to third parties.
- (4) The Two Parties shall not be liable for the inability to provide TANSO-3 products due to missing data, degradation in data quality, data delivery delays, or other circumstances involving problems with the satellite or ground facilities.

9. Other

The Data Policy is applicable to GOSAT-GW TANSO-3 data but not applicable to GOSAT and GOSAT-2 data. For the data policy concerning GOSAT and GOSAT-2 data, refer to the GOSAT and GOSAT-2 Data Policy.

Table 1 List of TANSO-3 Products

Product	Observation Mode	Calibration Type	Product Name (Japanese)	Product Name (English)	Product Name (Abbraviation)	Main Contents	Product Category	Provision	Provision Data Format	Remarks
10101	2010	179%	(represent)	(infran)	Contenting	CONTRACTS	cargory	5210	1911 Citta	
LLA	Wide		ODSAT-OWTANNO-3 EMMIRIT-	GOSAT-OW TANSO-3	GWT3W IIA		Internal	(observation regard and),		
12.4	91404		ドロムブロダクト	Wide-mode LLA Product	04124-117		anners ar	same as daylight areas in		
								one-orbit)		
		Lunar								Binning width
		Bright	GOSAT-GWTANSO-3 広ば報酬モー ドロム株正プロダクト	- GUSAT-OW TANSO-3 Wide-mode CAL LLA Product	GWT3W_CAL_LLA		Internal	Site (observation request anti)		depends on observation
		Dark								conditions.
						Sensor extput			-	
	Pocas		006A3-0WTAN80-5 積密観測モー		GWEDF_LLA	values	Internal	Site	HERE'S	
	a couple		デビムプロダウト	Foras-mode LLA Product	de to jun			(observation request ant)		
									-	
		Solar								
		Diffuser								Binning width
		Lunar	GOSAT-GWTANSO-3 積密観測モー FLIA 校正プロダクト	GUSAT-OW TANSO-3 Foreas-mode CALLIA Product	GWTHF_CAL_LLA		Internal	Site (observation request anti)		depends on observation
		Bright	CONTRACT OF 21							conditions.
		Dark								
Product	Observation	Calibration	Product Name	Product Name	Product Name	Main	Induc	Prevision	Prevision	Remarks
Level	Made	Тура	(Japanese)	(English)	(Abbraviation)	Contents	Category	Unit	Data Format	
								Scene		
LLB	Wide		COSAL-OWTANSO-3 (EMMIRITE-		GWT3W_LLB		Standard	(observation request units,		Provided in multiple films if the
			FL18 プロダクト	Widz-modu LLB Product				same as daylight areas in one-orbit)		size exceeds 45B.
								400 41013/	-	
		Lunar	005AT-09 TANSO-3 広城相談中一	CON AT CRETANNO 3				Scenar		Binning width depends on
		Bright	ドロ目検査プロダクト	Wide-mode CAL LLB Product	OMILAR_CVITTE		Internal	(observation request units)		abservation
		Dark								conditions.
						Sector			-	
	Focus		GOSAT-GWTANSO-3 株容報測モー		GWTSF LIB	radioner	Stendard	Scenas	HDF5	
	100.00		F LLB プロダウト	Foras-mode L1B Product	Gentin (Alle			(observation request units)		
									-	
		Seim								
		Diffuser								Binning width
		Lunar	- 006A3-0WTAN80-3 緯密観測モー F118 検定プロダクト	GOSAT-OW TANSO-3 Freeze-mode CALLUB Product	OWTHE CALLER		Internal	Scenes (observation request units)		depends on about alion
		Bright	トロロ検エンロタット	Lobilit, anothe Constraint Lookhot				(connectment reducer excess)		conditions.
		Dark								
	Observation.								Prevision	Remarks
Product	Observation.	Processing	Product Name	Product Name	Product Name	Main	Product	Prevision	LT6A18108	NOTIFIER NO
Product Level	Mede	Processing Type	Product Name (Japanese)	Product Name (English)	Product Name (Abbreviation)	Contents	Product Category	Unit	Data Format	Remarks
Level	Mede	Турс	(Japanese)	(English)	(Abbreviation)	Contents XCO2, XCH4.				accessing.
				(English)		Contents NCOL NCH. Chlorophyll fluorescenor				ACCESSION
Level	Mede	Турс Он+	(Japanese) GOSA1-GW TANDO-3 広球観測モー	(Exglish) GOSAT-OW TANSO-3	(Abbreviation)	Contents NCO2, NCH4. Chloruphyll ftsormornor				ACTING S
Level	Mede	Турс Он+	(Japanese) GOSA1-GW TANDO-3 広球観測モー	(Exglish) GOSAT-OW TANSO-3	(Abbreviation) GWT3W_L2_GBQ	Contents NCO2, NCH4. Chloruphyll ftsormornor	Category	Unit		ACTION OF
Level	Mede	Турс Он+	(Japanesik) GOSA I-GPI TANSIO-3 広球電源モー ド12 広言効果気体 プロダウト	(English) GOSAT-GW TANSO-3 Wide-mode L2 GBG Product	(Abbreviation)	Contents WCOL WCH4. Chiorophyll Busenseener irstengily	Category	Unit		ACTION OF
Level	Mede	Турс Он+	<u>Clipsent</u> GG5A1-G9 TANDO3 広ば観測で一 F12 直面効果気体プロダウト GO5A1-G9 TANDO-1 広球観測で一	(English) QUSAT-GW TANBO-3 Wide-mode L2 GHO Product QUSAT-GW TANBO-3	(Abbreviation) GWT3W_L2_GBQ	Contents XCO2, XCB4, Chiorophyli fluorescence intensity NO2 (Column obundance)	Category	Unit		
Level	Mede Wide	Турс Он+	<u>Clipsent</u> GG5A1-G9 TANDO3 広ば観測で一 F12 直面効果気体プロダウト GO5A1-G9 TANDO-1 広球観測で一	(Biglish) QUSAT-OW TANSO-3 Wide-mode L2 QBO Product QUSAT-OW TANSO-3 Wide-mode L2 NUL Product QUSAT-OW TANSO-3	(Abbrevistion) GW13W_12_GB0 GW13W_12_N02	Contents NCOL NOB4 Chierophyli Burenseener intensity NO2 (Column	Category	Unit		
Level	Mede	Type One Month		(English) GUSAT-GWTANSO-3 Wide-mode L2 OEO Product OOSAT-GWTAN8O-3 Wide-mode L2 NOI Product	(Abbreviation) GWT3W_L2_GBQ	Contents NCOL, NCH4, Chlorophyti Bunersoense Invesselly NCOL (Column shundance) NCOL, NCH4, Chlorophyti Bunergeotov	Category	Unit Daily		
Level	Mede Wide	Type One Month One		(Biglish) QUSAT-OW TANSO-3 Wide-mode L2 QBO Product QUSAT-OW TANSO-3 Wide-mode L2 NUL Product QUSAT-OW TANSO-3	(Abbrevistion) GW13W_12_GB0 GW13W_12_N02	Contents XCO2, XCH4, Chiorophyll Bunenseener Irriengily NO2 (Column obundance) XCO2, XCH4, Chiorophyll	Category	Unit Duly Scenn		
Level	Mede Wide	Type One Month One		(Biglish) QUSAT-OW TANSO-3 Wide-mode L2 OHD Product QUSAT-OW TANSO-3 Wide-mode L2 XUE Product QUSAT-OW TANSO-3 QUSAT-OW TANSO-3	CAbbeeriations) GWT3 W_12_GB0 GWT3 W_12_M02 GWT3 F_12_GB0	Contents NCOL, NCB4, Chi oruphyti Busensonne intensity NO2 (Culu nm obumdanoc) NCO2, NCB4, Chi oruphyti Busensonno intensity NO2 (Culumn	Category	Unit Daily	Deta Format	
Level	Mede Wide	Type One Month One		(Biglish) OOSAT-OWTANSO-3 Wide-mode L2 OEO Product OOSAT-OWTANSO-3 Wide-mode L2 NOL Product OOSAT-OWTANSO-3 Preas-mode L2 GHO Preduct	(Abbrevistion) GW13W_12_GB0 GW13W_12_N02	Contents NCOL, NCH4, Chicosphyti Ruserssoner intensity NCOL (Cola nm obundanco) NCOL, NCH4, Chicosphyll Rusensoneo intensity	Category	Unit Duly Scenn	Deta Format	
Level	Mede Wide	Type One Month One	Uppersol 005A1-070 TANSO-3 広切電源モード12 返室効果気体 プロダウト 005A1-070 TANSO-1 広切電源モード12 二酸七窒素 プロダウト 005A1-070 TANSO-1 自空電源モード12 国家効果気体 プロダウト 005A1-070 TANSO-1 自空電源モード12 国家効果気体 プロダウト 005A1-070 TANSO-3 自空電源モード12 二酸七窒素 プロダウト	(Biglish) OOSAT-OWTANSO-3 Wide-mode L2 OEO Product OOSAT-OWTANSO-3 Wide-mode L2 NOL Product OOSAT-OWTANSO-3 Peear-mode L2 KOL Product OOSAT-OWTANSO-3 Peear-mode L2 NOL Product	CAbbeeriations) GWT3 W_12_GB0 GWT3 W_12_M02 GWT3 F_12_GB0	Contents NCOL, NCB4, Chi oruphyti Busensonne intensity NO2 (Culu nm obumdanoc) NCO2, NCB4, Chi oruphyti Busensonno intensity NO2 (Culumn	Category	Unit Duly Scenn	Deta Format	
Level	Mede Wide	Type Oka Morth Oke Morth Quick	Upstand G05A1-09 TANDOJ 広切電源モー F12 正常効果気体プロダウト C05A1-09 TANDOJ 広切電源モー F12 正常効果気体プロダウト C05A1-09 TANDOJ 旅行電源モー F12 正常効果気体プロダウト C05A1-09 TANDOJ 旅行電源モー F12 二酸七窒素プロダウト C05A1-09 TANDOJ 旅行電源モー F12 二酸七窒素プロダウト C05A1-09 TANDOJ 旅行電源モー F12 二酸七窒素プロダウト C05A1-09 TANDOJ 旅行電源モー C05A1-09 TANDOJ 旅行電源モー	(Brglith) OCBAT-OW TANGO-3 Wide-enode L2 OHC Product OCBAT-OW TANNO-3 Wide-enode L2 NOE Product OCBAT-OW TANNO-3 Feese-enode L2 GRG Product OCBAT-OW TANNO-3 Feese-enode L2 NOE Product OCBAT-OW TANNO-3	0880;::::::::::::::::::::::::::::::::::	Contents NCOL, NCH4, Chi-oraphyti Banemoenee Intenation obundance/ NICOL, NCH4, Chi-oraphyti Buorasonee intensity NCOL (Calumn obundance/ NICOL, NCH4, Chi-oraphyti SUCOL, NCH4, Chi-oraphyti	Category	Unit Duly Scenn	Deta Format	
Level	Mede Wide	Type Oha Moerifi Ohe Moerifi	Uppersol 005A1-070 TANSO-3 広切電源モード12 返室効果気体 プロダウト 005A1-070 TANSO-1 広切電源モード12 二酸七窒素 プロダウト 005A1-070 TANSO-1 自空電源モード12 国家効果気体 プロダウト 005A1-070 TANSO-1 自空電源モード12 国家効果気体 プロダウト 005A1-070 TANSO-3 自空電源モード12 二酸七窒素 プロダウト	(Brglith) OCBAT-OW TANGO-3 Wide-enode L2 OHC Product OCBAT-OW TANNO-3 Wide-enode L2 NOE Product OCBAT-OW TANNO-3 Feese-enode L2 GRG Product OCBAT-OW TANNO-3 Feese-enode L2 NOE Product OCBAT-OW TANNO-3	CAbbeeriations) GWT3 W_12_GB0 GWT3 W_12_M02 GWT3 F_12_GB0	Contents NCOL, NCB4. Charaphyli Busenscenee intonaity NO2 (Cultum abundance) NCOL, NCB4. Busensente intonaity NO2 (Cultum abundance) NCOL (Cultum abundance) NCOL (Cultum abundance)	Category	Unity Daity Scenn (oburryglan request (units)	Deta Format	
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Level	Mede Wide	Type Oka Morth Oke Morth Quick	Uppered 005x11-07 TANDOI 広装電源モー F12 返室効果気体 プロダウト 005x11-07 TANDOI 広装電源モー F12 二酸七葉素 プロダウト 005x11-07 TANDOI 情密電源モー F12 正常効果気体 プロダウト 005x1-07 TANDOI 情密電源モー F12 二酸七葉素 プロダウト 005x1-07 TANDOI 情密電源モー F12 二酸七葉素 プロダウト 005x1-07 TANDOI 情密電源モー F12 二酸七葉素 プロダウト F12 二酸七葉素 プロダウト	(Brglith) QUSAT-OWTANSO-3 Wide-mode L2 OHO Product QUSAT-OWTANSO-3 Wide-mode L2 NUL Product QUSAT-OWTANSO-3 Preas-mode L2 GHO Product QUSAT-OWTANSO-3 Preas-mode L2 NUL Product QUSAT-OWTANSO-3 Preas-mode L2 GHO Product QUSAT-OWTANSO-3 Preas-mode L2 GHO Product QUSAT-OWTANSO-3 News-mode 12 SIGN Product QUSAT-OWTANSO-3 News-mode 12 SIGN Product	0880;::::::::::::::::::::::::::::::::::	Contents NCOL, NCH4 (Sharephyli Busenseenee intonsity NO2 (Colarms abundanor) NCX2, XCH4, Chlorephyli Busensomer intensity NO2 (Calarm abundanor) NCX2, XCH4, Chlorephyli Busensomer	Category - Standard - Standard	Unity Daily Score n (observation request (satu)	Deta Format	

Table 2 User categories

User category	Description
Project Staff (PS)	Staff members of the Two Parties (the implementing entities of the project carrying out the Mission) who engage in the project; or employees of any organization or company involved in the project under an agreement with one of the Two Parties. All products are available for Project Staff.
Authorized User (AU)	 Users who fall into the following user type. Authorized users are eligible to receive standard products prior to public release as needed. Staff members of collaborating organizations Staff members of organizations that collaborate in aspects of sensor development, calibration/validation, research or data processing, provide data essential for data processing, or collaborate in product distribution, who are authorized by the Two Parties. In addition, persons who contract with a collaborating organization solely for the purpose of carrying out such work and who are known to the Two Parties¹⁷, are considered to be staff members of the collaborating organization.
General User (GU)	General users who do not fall into the above user categories.