IoT Big Data Harmonised Data Model
Version 6.0
29 October 2018

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__Important Information__

It has been agreed through the IoT Big Data project that all publishing of Harmonised Data Models will now be done through GitHub.

The Permanent Reference Document (PRD) CLP.25 IoT Big Data Framework Architecture – has now been updated to replace references to NGSIv2 with NGSI-LD, and by providing links to the NGSI-LD specification maintained by ETSI.

NGSI-LD compliant harmonised data models can be located at:

https://github.com/GSMADeveloper/NGSI-LD-Entities

Annex A   Document History

Version	Date	Brief Description of Change	Approval Authority	Editor / Company
0.10	8 Sept 2016	New PRD - first draft	PSMC	Allan Bartlett / GSMA
1.0	11 Oct 2016	Approved first version	PSMC	Allan Bartlett / GSMA
2.0	21 June 2017	Updated PRD with the following improved definitions: 1. Mandatory Null Values removed (Generic issue) changed to three possible combinations (section 2.3): I. "Mandatory / May not be Null" – attribute must always be specified and with a non Null value; II. "Recommended / May be Null" – attribute should always be specified but may have a Null value or may default to a defined value if omitted; III. "Optional / May be Null" – attribute	Project Approval	Allan Bartlett / GSMA

		may be specified but may have a Null value or may default to a defined value if omitted. 2. 'Environment Observed' entity 2.3.16 has 'Measurand' attribute removed due to ambiguous usage. 3. 'Machine' entity 2.3.17 has 'factory' attribute added. 4. 'Product' entity 2.3.21 allowed only one supplierName to be listed (Specific to 'Product' entity) so changed to supplier or the URL to the supplier of the product or to a list of suppliers for the product. The URL can point to either a web page for one or more suppliers or a JSON based list of suppliers structured using the Schema.org defined 'Organisation' URL 5. 'ProductRecord' entity		

		2.3.22 (Specific issue to 'ProductRecord') enhanced e.g. O2 attribute 6. 'Vehicle' entity 2.3.28 references multiple 'VehicleType's (Specific to 'Vehicle' entity) so changed the definition of the 'refVehicleType' attribute to a single value rather than a list of values. 7. 'Vehicle' entity 2.3.28 updated with 'fuelEconomy' attribute adopted to use the Schema.org definition of 'fuelEfficiency' which is based on 'Quantitative Value'. 8. 'WaterQualityObserved' 2.3.31 - removed 'measurand' (Generic issue with 'measurand'). Measurand removed from this and all other entity definitions. 9. 'WeatherForecast' 2.3.32 attribute 'visibility' lacked agreement on definition (Specific		

		issue to 'WeatherForecast') so revised to type 'ExtQuantitativeValue' and normally recorded in metres (though with the option to use 'statute miles' provided the relevant unitCode is used within 'ExtQuantitativeValue') 10. 'WeatherForecast' 2.3.32 validity period was not queryable using NGSIv2 (Generic issue for validity periods) so revised the 'validity' attribute to separate 'validFrom' and 'validTo' attributes. 11. 'WeatherForecast' 2.3.32 'dayMinimum' & 'dayMaximum' attributes was not queryable using NGSIv2 (Generic issue relating to 'Array of text') so have been revised. GSMA logo updated on page 1 Typo on page 11 of Whcere corrected to Where		

3.0	24 Oct 2017	Updated entities: 2.3.17 machine 2.3.19 machineOperation New entities: 2.3.20 MarketPriceForecast 2.3.21 MarketPriceObserved Annex B6 schema.org/PriceSpecification	Project Approval	Allan Bartlett / GSMA
4.0	22 Dec 2017	Updated entities: 2.3.9 AirQualityObserved New entities 2.3.30 UAV 2.3.31 UAVADSB 2.3.32 UAVEvent 2.3.33 UAVModel 2.3.34 UAVStateVector 2.3.35 UAVTMS 2.3.36 UAVUTMFlightMessage 2.3.37 UAVUTMFlightMessageAgent Annex B7 schema.org/SoftwareApplication Annex C UAV entity definitions	Project Approval	Allan Bartlett / GSMA
5.0	31 Jan 2018	Updated entities: 2.3.46 WeatherObserved JSON examples removed from all entities GIT HUB references remain. New entities 2.3.17 FleetVehicle 2.3.18 FleetVehicleOperation 2.3.19 FleetVehicleStatus	Project Approval	Allan Bartlett / GSMA

		Annex B Moved to GIT HUB, reference included Annex C Moved to GIT HUB, reference included		
6.0	8 Oct 2018	Document updated to reflect that all publishing of Harmonised Data Models will now be done through GitHub.	Project Approval	Ilara Mukoro / GSMA

Other Information

Type	Description
Document Owner	Internet of Things– IoT Big Data Project
Editor / Company	GSMA

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Your comments or suggestions & questions are always welcome.