Data Offerings description schema definitions in the API template

When Creating resources as per Data Offering

please try to use the entire template structure
and remember again that you need to use the entire template with all attributes of the template even if you have to keep some "values" of the attribute empty

Take Note That for the creation of DataOfferings system will accept with new deployment in progress

1 Data Offering has

- 1 "Contract parameters" description
- - 1 "Pricing part" description
- - 1 "Dataset" description
- - possible array for “Distribution
- - array for “DataInformation"
- - list for Theme

You can find the main Semantic Data Models files for i3-Market in github / gitlab projects at

GitHub: https://github.com/i3-Market-V3-Public-Repository
GitLab: https://gitlab.com/i3-market-v3-public-repository

e.g. https://github.com/i3-Market-V3-Public-Repository/SemanticsDataModels

Definitions for Semantic description of Data Offerings in relation to the API Template

When Creating resources as per Data Offering Description you fill the attributes fields to describe the traded/shared assets and datasets in the templates that are registered in the registry catalog and allow the collection of information that are used by engine and other components to retrieve details for search, retrieve of data for information systems and operations.

Definitions for Semantic description of Data Offerings in relation to the API Template

DataOffering

{

"marketId":

Semantic Attribute:	core:marketId
Definition:	This is the market name Id, which is uniquely identified a marketplace
Range:	Market place Identifier: xsd:string
Usage note:	
See also:	

"provider":

Semantic Attribute:	core:provider
Definition:	Provider of the DataOffering
Range:	Provider Identifier: xsd:string
Usage note:	Should be the identifier of the Provider in i3-Market system Verification should be done with registered providers. All other providers shall be rejected. Return an error message in case an unregistered provider is specified.
See also:	Maybe connected with the IDs in Identity manager. **As the actual registration is by the Marketplaces/DataSpaces they have the knowledge and responsability to have the name/identity of the Providers [that have knowledge of the Owners] they would know who are the providers.**

"owner":

Semantic Attribute:	core:owner
Definition:	Owner of the DataOffering
Range:	Owner Identifier: xsd:string
Usage note:	Should be the identifier of the Owner in i3-Market system. Owners are not registered in i3-MARKET. Optional parameter. Not to be verified.
See also:	

"marketDid": **(could be automatically filled by e.g. WEB-RI in creation moment of the data offering)**

Semantic Attribute:	core:marketDid
Definition:	This is the market Did, registered in VC and i3-Market, which is uniquely identified a marketplace
Range:	Market place Identifier: did
Usage note:	This ID is generated at the marketPlace level, and inserting into an offering automatically by the marketPlace itself rather than by a user.
See also:	

"providerDid": (could be automatically filled by e.g. WEB-RI in creation moment of the data offering)

Semantic Attribute:	core:providerDid
Definition:	Provider of the DataOffering Did, registered in VC and i3-Market, which is uniquely identified
Range:	Provider Identifier: did

Usage note:	Should be the identifier of the Provider in i3-Market system Verification should be done with registered providers. All other providers shall be rejected. Return an error message in case an unregistered provider is specified.
See also:	linked to VC

"ownerDid": (could be automatically filled by e.g. WEB-RI in creation moment of the data offering)

Semantic Attribute:	core:ownerDid
Definition:	Owner of the DataOffering Did, registered in VC and i3-Market, which is uniquely identified
Range:	Owner Identifier: did
Usage note:	Should be the identifier of the Owner in i3-Market system. Owners are not registered in i3-MARKET. Optional parameter. Not to be verified.
See also:	Maybe connected with the IDs in Identity manager

" ownerConsentForm":

(should be implemented allowing the indication for user consent form hash details)

Semantic Attribute:	core:ownerConsentForm
Definition:	Hashtag string to report the information about the explicit user consent form documentations
Range:	
Usage note:	Should be the Hashtag string to report the information about the explicit user consent form documentations
See also:	

" active":

Semantic Attribute:	core:active
Definition:	boolean to define if the DataOffering is ready to be visible.
Range:	
Usage note:	Should be the boolean to define if the DataOffering is ready to be visible. true or false
See also:	

" inSharedNetwork":

Semantic Attribute:	core:inSharedNetwork
Definition:	boolean to define if the DataOffering is shared by Marketplace to be visible and consumable by all actors in the i3-Market Network.
Range:	
Usage note:	Should be the boolean to define if the DataOffering is shared by Marketplace to be visible and consumable by all actors in the i3-Market Network. true or false
See also:	

" personalData":

Semantic Attribute:	core:personalData
Definition:	Boolean: To define if the data offering offer dataset that contain personal data
Range:	

Usage note:	Should be the Boolean To define if the data offering offer dataset that contain personal data
See also:	

"dataOfferingTitle":

Semantic Attribute:	core:dataOfferingTitle
Definition:	The title of the DataOffering
Range:	xsd:string
Usage note:	A name to identify the dataoffering. A few words only, that summarize the offering.
See also:	

"dataOfferingDescription":

Semantic Attribute:	core:dataOfferingDescription
Definition:	A description of the DataOffering
Range:	xsd:string
Usage note:	Used to have descrition text to describe what the data offering is about. This can be a long block of text. At least 1000 chars shall be reserved for this.
See also:	

"category":

Semantic Attribute:	core:category
Definition:	A category to have high level classification of domain for the Data Offering

Range:	xsd:anyURI
Usage note:	Use the Categories naming schemaa defined for high level categories as URIs: Categories should only be added through extending the categories list. This is done by the community. The parameter should be checked against this list. If it does not match, return an error.
See also:	Categories in Table below prefix: dataCatagory <http://i3.market.eu/auth/dataCatagory> dataCatagory:Automotive Data Categories [as per definitions in gitlab file: https://gitlab.com/i3-market/code/data-models/-/blob/master/Version-1/DataOfferingCategory.ttl] <http://i3.market.eu/auth/dataCatagory/Manufacturing> <http://i3.market.eu/auth/dataCatagory/Automotive> <http://i3.market.eu/auth/dataCatagory/Wellbeing> <http://i3.market.eu/auth/dataCatagory/Agriculture> <http://i3.market.eu/auth/dataCatagory/Culture> <http://i3.market.eu/auth/dataCatagory/Economy> <http://i3.market.eu/auth/dataCatagory/Education> <http://i3.market.eu/auth/dataCatagory/Energy> <http://i3.market.eu/auth/dataCatagory/Environment> <http://i3.market.eu/auth/dataCatagory/Government> <http://i3.market.eu/auth/dataCatagory/Health> <http://i3.market.eu/auth/dataCatagory/International>

	<http://i3.market.eu/auth/dataCatagory/Justice> <http://i3.market.eu/auth/dataCatagory/Regions> <http://i3.market.eu/auth/dataCatagory/Society> <http://i3.market.eu/auth/dataCatagory/Science> <http://i3.market.eu/auth/dataCatagory/Transport> see also file DataOfferingCategory.ttl

"status":

Semantic Attribute:	core:status
Definition:	To define if the dataoffering status
Range:	xsd:string
Usage note:	Possible values: “Inactive”: The offer is not visible, but still exists and can be activated again. “ToBeDeleted”: Data offer is still available and visible but will be deleted once the last contract on this offer expired. No new purchases allowed on it. “Deleted”: The offer is not visible and cannot be activated again. No longer available for consumers or providers.
Note:	Rename this field to “**Status**”. Possible values: “Inactive”: The offer is not visible, but still exists and can be activated again. “ToBeDeleted”: Data offer is still available and visible but will be deleted once the last contract on this offer expired. No new purchases allowed on it. “Deleted”: The offer is not visible and cannot be activated again. No longer available for consumers or providers.

"dataOfferingExpirationTime":

Semantic Attribute:	core:dataOfferingExpirationTime
Definition:	Expiration Time of dataOffering in case
Range:	Can be: xsd:dateTime
Usage note:	The dateTime data type is used to specify a date and a time. The dateTime is specified in the following form "YYYY-MM-DDThh:mm:ss" where: • YYYY indicates the year • MM indicates the month • DD indicates the day • T indicates the start of the required time section • hh indicates the hour • mm indicates the minute • ss indicates the second **Note:** All components are required! The following is an example of a dateTime declaration in a schema: “2002-05-30T09:00:00”
See also:	

"dataOfferingCreated": [this can be created automatically by the system at registration time, by engine timestamp, instead of manually by market...]

RDF property	core:dataOfferingCreated
Definition:	Date of formal issuance [e.g., publication] of the data offering.
Range:	encoded using the relevant ISO 8601 Date and Time compliant string [DATETIME] and typed using the appropriate XML Schema datatype [XMLSCHEMA11-2] [xsd:dateTime].
Usage note:	This property SHOULD be set using the first known date of issuance.

	The date of the initial publication of this data offering in i3-MARKET.
See also:	§ 6.4.7 Property: release date

"lastModified": [this can be created automatically by the system at registration time, by engine timestamp, instead of manually by market...]

Semantic Attribute:	core:lastModified
Definition:	Most recent date on which the data offering was changed, updated or modified.
Range:	encoded using the relevant ISO 8601 Date and Time compliant string [DATETIME] and typed using the appropriate XML Schema datatype [XMLSCHEMA11-2] [xsd:dateTime].
Usage note:	The value of this property indicates a change to the data offering record. An absent value MAY indicate that the item has never changed after its initial publication, or that the date of last modification is not known, or that the item is continuously updated.
See also:	§ 6.6.2 Property: frequency, § 6.5.4 Property: update/modification date and § 6.8.4 Property: update/modification date in DCAT 3 webpage

"versionNotes":

Semantic Attribute:	`adms:versionNotes`
Definition:	A description of changes between this version and the previous version of the resource [*VOCAB-ADMS*].
Range:	xsd:string
Usage note:	In case of backward compatibility issues with the previous version of the resource, a textual description of them *SHOULD* be specified by using this property.
See also:	§ 6.4.26 Property: current version, § 6.4.24 Property: has version, § 6.4.28 Property: is replaced by, § 6.4.25 Property: is version of, § 6.4.23 Property: previous version, § 6.4.7 Property: release date, § 6.4.27 Property: replaces, § 6.4.31 Property: status, § 6.4.30 Property: version notes.

"previousVersion":

Semantic Attribute:	`dcat:previousVersion`
Definition:	The previous version of a resource in a lineage [*PAV*].
Range:	xsd:anyURI
Usage note:	This property is meant to be used to specify a version chain, consisting of snapshots of a resource. The notion of version used by this property is limited to versions resulting from revisions occurring to a resource as part of its life-cycle. One of the typical cases here is representing the history of the versions of a dataset that have been released over time.
See also:	§ 6.4.26 Property: current version, § 6.4.24 Property: has version, § 6.4.28 Property: is replaced by, § 6.4.25 Property: is version of, § 6.4.23 Property: previous version, § 6.4.7 Property: release date, § 6.4.27 Property: replaces, § 6.4.31 Property: status, § 6.4.30 Property: version notes.

"replaces":

Semantic Attribute:	`dcterms:replaces`
Definition:	A related resource that is supplanted, displaced, or superseded by the described resource [*DCTERMS*].
Range:	xsd:anyURI
Usage note:	resource replaced
See also:	§ 6.4.26 Property: current version, § 6.4.24 Property: has version, § 6.4.28 Property: is replaced by, § 6.4.25 Property: is version of, § 6.4.23 Property: previous version, § 6.4.7 Property: release date, § 6.4.27 Property: replaces, § 6.4.31 Property: status, § 6.4.30 Property: version notes.

"previousVersion":

Semantic Attribute:	`dcat:previousVersion`
Definition:	The previous version of a resource in a lineage [*PAV*].
Range:	xsd:anyURI
Usage note:	This property is meant to be used to specify a version chain, consisting of snapshots of a resource. The notion of version used by this property is limited to versions resulting from revisions occurring to a resource as part of its life-cycle. One of the typical cases here is representing the history of the versions of a dataset that have been released over time.
See also:	§ 6.4.26 Property: current version, § 6.4.24 Property: has version, § 6.4.28 Property: is replaced by, § 6.4.25 Property: is version of, § 6.4.23 Property: previous version, § 6.4.7 Property: release date, § 6.4.27 Property: replaces, § 6.4.31 Property: status, § 6.4.30 Property: version notes.

"contractParameters":

{

"interestOfProvider":

Semantic Attribute:	core:interestOfProvider
Definition:	This property is used to identify the interest of the data owner/provider related to the trading/sharing of their data assets. The following possibilities exist: • Free Sharing • Quotation • Selling of data [e.g. just earning money by selling the data, no specific feedback on these data by a data consumer expected
Range:	xsd:string
Usage note:	It could be simple notations like: Free Sharing -Quotation -Selling of data ; or we can decide to have specific definitions for our system
See also:	

"interestDescription":

Semantic Attribute:	core:interestDescription
Definition:	Data provider can specify which sort of quotation he wants exactly, e.g., quotation for maintenance service or quotation for optimization of production
Range:	xsd:string
Usage note:	More text description of the interest of the data owner/provider related to the trading/sharing of their data assets. Example: “This data is shared only for the purpose of creating a quotation for maintenance for the production machines described in the data set. Any other use of this data is not permitted.”
Note:	

"hasGoverningJurisdiction":

Semantic Attribute:	core:hasGoverningJurisdiction
Definition:	The file format of the distribution.
Range:	xsd:string [or xsd:anyURI]
Usage note:	Can be string naming like: GLOBAL US-JURISDICTION EU-JURISDICTION [or we use URIs to define the specific terms for jurisdictions To be extended to Define a list of jurisdictions, which are valid here.
See also:	

"purpose":

Semantic Attribute:	core:purpose
Definition:	Purpose of the Agreement
Range:	xsd:string
Usage note:	Short label for the purpose In case we could have specific terminology for define list of @purpose@ terms
Note:	This parameter is part of the contractual parameters. Ask contract partners, what this is for [Susanne].

"purposeDescription":

Semantic Attribute:	core:purposeDescription
Definition:	In case full text description of describing the reasons behind the creation of the Agreement
Range:	xsd:string
Usage note:	text description
Note:	This parameter is part of the contractual parameters. Ask contract partners, what this is for [Susanne]

"hasIntendedUse":

{

"processData": "true OR false",

Semantic Attribute:	core:processData
Definition:	If consumer allowed to process data
Range:	xsd:boolean
Usage note:	The value space of xsd:boolean is true and false. Its lexical space accepts true, false, “TRUE” or “FALSE”

Note:	Part of contractual parameters. Ask contract partners, what this is for. Make this parameter to type Boolean.

"shareDataWithThirdParty": "true OR false",

Semantic Attribute:	core:shareDataWithThirdParty
Definition:	If consumer allowed to share data with third parties
Range:	xsd:boolean
Usage note:	The value space of xsd:boolean is true and false. Its lexical space accepts true, false, “TRUE” or “FALSE”
Note:	Part of contractual parameters. Ask contract partners, what this is for. Make this parameter to type Boolean.

"editData": "true OR false"

Semantic Attribute:	core:editData
Definition:	If consumer allowed to edit the Data
Range:	xsd:boolean
Usage note:	The value space of xsd:boolean is true and false. Its lexical space accepts true, false, “TRUE” or “FALSE”
Note:	Part of contractual parameters. Ask contract partners, what this is for. Make this parameter to type Boolean.

} ,

"hasLicenseGrant":

{

"paidUp": "true OR false",

Semantic Attribute:	core:paidUp
Definition:	If licence grant to paidUp
Range:	xsd:boolean
Usage note:	The value space of xsd:boolean is true and false. Its lexical space accepts true, false, “TRUE” or “FALSE”
Note:	Part of contractual parameters. Ask contract partners, what this is for.

"transferable": "true OR false",

Semantic Attribute:	core:transferable
Definition:	If licence is transferable
Range:	xsd:boolean
Usage note:	The value space of xsd:boolean is true and false. Its lexical space accepts true, false, “TRUE” or “FALSE”
See also:	

"exclusiveness": "true OR false",

Semantic Attribute:	core:exclusiveness
Definition:	If licence grant exclusiveness
Range:	xsd:boolean
Usage note:	The value space of xsd:boolean is true and false. Its lexical space accepts true, false, “TRUE” or “FALSE”
See also:	

"revocable": "true OR false"

Semantic Attribute:	core:revocable

Definition:	If licence is revocable
Range:	xsd:boolean
Usage note:	The value space of xsd:boolean is true and false. Its lexical space accepts true, false, “TRUE” or “FALSE”
See also:	

"processing": "true OR false",

Semantic Attribute:	core:processing
Definition:	If licence grant data to be processed
Range:	xsd:boolean
Usage note:	The value space of xsd:boolean is true and false. Its lexical space accepts true, false, “TRUE” or “FALSE”
Note:	Part of contractual parameters. Ask contract partners, what this is for.

"modifying": "true OR false",

Semantic Attribute:	core:modifying
Definition:	If licence grant data to be modified
Range:	xsd:boolean
Usage note:	The value space of xsd:boolean is true and false. Its lexical space accepts true, false, “TRUE” or “FALSE”
Note:	Part of contractual parameters. Ask contract partners, what this is for.

"analyzing": "true OR false",

Semantic Attribute:	core:analyzing
Definition:	If licence grant data to be analyzed

Range:	xsd:boolean
Usage note:	The value space of xsd:boolean is true and false. Its lexical space accepts true, false, “TRUE” or “FALSE”
Note:	Part of contractual parameters. Ask contract partners, what this is for.

"storingData": "true OR false",

Semantic Attribute:	core:storingData
Definition:	If licence grant to store data
Range:	xsd:boolean
Usage note:	The value space of xsd:boolean is true and false. Its lexical space accepts true, false, “TRUE” or “FALSE”
Note:	Part of contractual parameters. Ask contract partners, what this is for.

"storingCopy": "true OR false",

Semantic Attribute:	core:storingCopy
Definition:	If licence grant to store a copy data
Range:	xsd:boolean
Usage note:	The value space of xsd:boolean is true and false. Its lexical space accepts true, false, “TRUE” or “FALSE”
Note:	Part of contractual parameters. Ask contract partners, what this is for.

"reproducing": "true OR false",

Semantic Attribute:	core:reproducing
Definition:	If licence grant to reproduce data
Range:	xsd:boolean

Usage note:	The value space of xsd:boolean is true and false. Its lexical space accepts true, false, “TRUE” or “FALSE”
Note:	Part of contractual parameters. Ask contract partners, what this is for.

"distributing": "true OR false",

Semantic Attribute:	core:distributing
Definition:	If licence grant to distribute data
Range:	xsd:boolean
Usage note:	The value space of xsd:boolean is true and false. Its lexical space accepts true, false, “TRUE” or “FALSE”
Note:	Part of contractual parameters. Ask contract partners, what this is for.

"loaning": "true OR false",

Semantic Attribute:	core:loaning
Definition:	If licence grant to loan data
Range:	xsd:boolean
Usage note:	The value space of xsd:boolean is true and false. Its lexical space accepts true, false, “TRUE” or “FALSE”
Note:	Part of contractual parameters. Ask contract partners, what this is for.

"selling": "true OR false",

Semantic Attribute:	core:selling
Definition:	If licence grant to sell data
Range:	xsd:boolean
Usage note:	The value space of xsd:boolean is true and false. Its lexical space accepts true, false, “TRUE” or “FALSE”

Note:	Part of contractual parameters. Ask contract partners, what this is for.

"renting": "true OR false",

Semantic Attribute:	core:renting
Definition:	If licence grant to rent data
Range:	xsd:boolean
Usage note:	The value space of xsd:boolean is true and false. Its lexical space accepts true, false, “TRUE” or “FALSE”
Note:	Part of contractual parameters. Ask contract partners, what this is for.

"furtherLicensing": "true OR false",

Semantic Attribute:	core:furtherLicensing
Definition:	If licence grant for further Licensing
Range:	xsd:boolean
Usage note:	The value space of xsd:boolean is true and false. Its lexical space accepts true, false, “TRUE” or “FALSE”
Note:	Part of contractual parameters. Ask contract partners, what this is for.

"leasing": "true OR false",

Semantic Attribute:	core:leasing
Definition:	If licence grant to lease data
Range:	xsd:boolean
Usage note:	The value space of xsd:boolean is true and false. Its lexical space accepts true, false, “TRUE” or “FALSE”
Note:	Part of contractual parameters. Ask contract partners, what this is for.

} } ,

"hasPricingModel":

{

"pricingModelName":

Semantic Attribute:	pricingmodel:pricingModelName
Definition:	The name to define the legacy, by Marketplace, pricing model related to the data offering
Range:	xsd:string
Usage note:	Princing models are individually defined by marketplaces. No common pricing model will be defined for i3-MARKET. Maybe try to generalize existing pricing models.
See also:	

"basicPrice":

Semantic Attribute:	pricingmodel:basicPrice
Definition:	The generic basic price for the traded data for basic cost of trade
Range:	xsd:double
Usage note:	Number related to price
See also:	

"currency":

Semantic Attribute:	pricingmodel:currency
Definition:	The file format of the distribution.
Range:	xsd:string
Usage note:	Using ISO 4215 Currency Terminology
See also:	lis-ISO-4217-Currencyt_one.xml See XML file for 3 letter abbreviations. lis-ISO-4217-Currencyt_one.xml

"hasPaymentOnSubscription":

{

"timeDuration":

Semantic Attribute:	pricingmodel:timeDuration
Definition:	Time duration of subscription
Range:	xsd:anyURI
Usage note:	Or generic xsd:string text with labels for duration vocabulary or URIs with vocabulary like: e.g. "http://reference.data.gov.uk/def/intervals/Day" “http://reference.data.gov.uk/def/intervals/Hour" "http://reference.data.gov.uk/def/intervals/Minute" "http://reference.data.gov.uk/def/intervals/Month" "http://reference.data.gov.uk/def/intervals/Quarter" "http://reference.data.gov.uk/def/intervals/Second" Price is per timeDuration. E.g., if parameter is “Second” here, then the specified price is per second [€ / s]
See also:	Terms in intervals.rdf

"description":

Semantic Attribute:	dcterms:description
Definition:	The description of payment on subscription
Range:	xsd:string

Usage note:	Text description
See also:	

"repeat":

Semantic Attribute:	pricingmodel:repeat
Definition:	If subscription can be repeated define the frequency, e.g. Daily, Monthly,....
Range:	xsd:anyURI
Usage note:	We can use specific vocabulary e.g. in freq.ttl definitions like: http://purl.org/cld/freq/daily freq:monthly freq:weekly …….
See also:	See also freq.ttl or frequency.ttl.txt

"hasSubscriptionPrice":

Semantic Attribute:	pricingmodel:hasSubscriptionPrice
Definition:	Price allocated to subscription payment type
Range:	xsd:double
Usage note:	Price
See also:	

} ,

"hasPaymentOnPlan":

{

There may be things like Basic Plan, Premium Plans, … Gives access to certain types of data. Difficult to implement in i3-MARKET.

Example for other usage: Deliver data only once a month or once every x period.
Optional parameter, does not have to be used.

"description":

Semantic Attribute:	pricingmodel:planDescription
Definition:	The text description of plan
Range:	Xsd:string
Usage note:	Description text
See also:	

"planDuration":

Semantic Attribute:	pricingmodel:planDuration
Definition:	The duration of the Plan
Range:	xsd:anyURI
Usage note:	Or generic xsd:string text with labels for duration vocabulary or URIs with vocabulary like: e.g. "http://reference.data.gov.uk/def/intervals/Day" “http://reference.data.gov.uk/def/intervals/Hour" "http://reference.data.gov.uk/def/intervals/Minute" "http://reference.data.gov.uk/def/intervals/Month"

	"http://reference.data.gov.uk/def/intervals/Quarter" "http://reference.data.gov.uk/def/intervals/Second"
See also:	Terms in intervals.rdf

"hasPlanPrice": "string"

Semantic Attribute:	pricingmodel:hasPlanPrice
Definition:	The price of the Plan
Range:	xsd:double
Usage note:	Price
See also:	

} ,

"hasPaymentOnApi":

{

"description":

Semantic Attribute:	Dcterms:description
Definition:	The text description of payment type
Range:	Xsd:string
Usage note:	Description text
Note:	Optional. Useful for Agora.

"numberOfObject":

Semantic Attribute:	pricingmodel:numberObject
Definition:	number of Objects for API Handle payments

Range:	Xsd:double
Usage note:	
Note:	Optional. Useful for Agora.

"hasAPIPrice": "string"

Semantic Attribute:	pricingmodel:hasAPIPrice
Definition:	The price of the API payment type
Range:	xsd:double
Usage note:	Price
Note:	Optional. Useful for Agora.

} ,

"hasPaymentOnUnit":

{

"description":

Semantic Attribute:	Dcterms:description
Definition:	The text description of payment type
Range:	Xsd:string
Usage note:	Description text Purchase a cluster of data. Sets of data. One cluster is a group of data sets.
See also:	

"dataUnit":

Semantic Attribute:	pricingmodel:dataUnit
Definition:	Data Unit type handle by service

Range:	Xsd:string
Usage note:	Define what the unit resembles. Example: A predefined data set. A "Unit" of transaction as indicated in specification of the service method of exchange .
See also:	Data unit type - In telecommunications, a **protocol data unit** (**PDU**) is a single unit of information transmitted among peer entities of a computer network , For example the data unit in which data are packeted when transmitted in streams. also e.g. a data unit that contains one or many stream data objects.

"hasUnitPrice": "string"

Semantic Attribute:	pricingmodel:hasUnitPrice
Definition:	The price of the by Unit payment type
Range:	xsd:double
Usage note:	Price per data unit
See also:	

} ,

"hasPaymentOnSize":

{

"description":

Semantic Attribute:	Dcterms:description
Definition:	The text description of payment type
Range:	Xsd:string
Usage note:	Description text
See also:	

"dataSize":

Semantic Attribute:	pricingmodel:dataSize
Definition:	The size of data exchanged for payment
Range:	typically typed as xsd:nonNegativeInteger.
Usage note:	The size in bytes can be approximated [as a non-negative integer] when the precise size is not known. While it is recommended that the size be given as an integer, alternative literals such as '1.5 MB' are sometimes used.
See also:	We can decide to use a specific vocabulary

"hasSizePrice": "string"

Semantic Attribute:	pricingmodel:hasSizetPrice
Definition:	The price of the by Unit payment type
Range:	xsd:double
Usage note:	Price E.g. pay per Megabyte of data.
See also:	

} ,

"hasFreePrice":

{

"hasPriceFree": "FREE"

Semantic Attribute:	pricingmodel:hasPriceFree
Definition:	The data is shared for free
Range:	Xsd:string
Usage note:	“FREE”. Data is for free, no payment needed.

See also:	We might use an URI as Pricingmodel:Free as unique term

} **}** **,**

"hasDataset":

{ [DataSet Description]

Description of the data sets contained. Note: This is not a description of the individual data items, but an overview.

"title":

Semantic Attribute:	dcterms:title
Definition:	A name given to the dataset.
Range:	Xsd:string [rdfs:Literal]
Usage note:	Title
See also:	

"keyword":

Semantic Attribute:	dcat:keyword
Definition:	A keyword or tag describing the resource.
Range:	Xsd:string [rdfs:Literal]
Usage note:	Text keywords, [in case we can decide to have a selection of terminologies to set as kaywords]. One or more keywords describing the data.
See also:	To have multiple keywords You can have multiple instances of the property "keyword"

"description":

Semantic Attribute:	dcterms:description

Definition:	A free-text account of the dataset.
Range:	Xsd:string [rdfs:Literal]
Usage note:	Description Text of Data Set
See also:	

"issued":

RDF property	dcterms:issued
Definition:	Date of formal issuance [e.g., publication] of the distribution.
Range:	encoded using the relevant ISO 8601 Date and Time compliant string [DATETIME] and typed using the appropriate XML Schema datatype [XMLSCHEMA11-2] [xsd:dateTime].
Usage note:	This property SHOULD be set using the first known date of issuance. The date of the initial publication of this dataset in i3-MARKET.
See also:	§ 6.4.7 Property: release date

"modified":

Semantic Attribute:	dcterms:modified
Definition:	Most recent date on which the item was changed, updated or modified.
Range:	encoded using the relevant ISO 8601 Date and Time compliant string [DATETIME] and typed using the appropriate XML Schema datatype [XMLSCHEMA11-2] [xsd:dateTime].
Usage note:	The value of this property indicates a change to the actual item, not a change to the catalog record. An absent value MAY indicate that the item has never changed after its initial publication, or that the date of last modification is not known, or that the item is continuously updated.

See also:	§ 6.6.2 Property: frequency, § 6.5.4 Property: update/modification date and § 6.8.4 Property: update/modification date in DCAT 3 webpage

"temporal":

Semantic Attribute:	dcterms:temporal
Definition:	The temporal period that the dataset covers.
Range:	In general used singularly can be used URIs as in intervals vocab OR dcterms:PeriodOfTime [An interval of time that is named or defined by its start and end dates]
Usage note:	In case we extend the model to serve The temporal coverage of a dataset may be encoded as an instance of dcterms:PeriodOfTime, or may be indicated using a IRI reference [link] to a resource describing a time period or interval. e.g. as [a dcterms:PeriodOfTime dcat:startDate "2016-03-04"^^xsd:dateTime ; dcat:endDate "2018-08-05"^^xsd:dateTime ;
See also:	Intervals.rdf

"language":

Semantic Attribute:	dcterms:language
Definition:	A language of the item. This refers to the natural language used for textual metadata [i.e. titles, descriptions, etc] of a cataloged resource [i.e. dataset or service] or the textual values of a dataset distribution
Range:	Resources defined by the Library of Congress [ISO 639-1, ISO 639-2] SHOULD be used.

	If a ISO 639-1 [two-letter] code is defined for language, then its corresponding IRI SHOULD be used; if no ISO 639-1 code is defined, then IRI corresponding to the ISO 639-2 [three-letter] code SHOULD be used.
Usage note:	Repeat this property if the resource is available in multiple languages.
See also:	Also If representations of a dataset are available for each language separately, define an instance of dcat:Distribution for each language and describe the specific language of each distribution using dcterms:language [i.e. the dataset will have multiple dcterms:language values and each distribution will have just one as the value of its dcterms:language property].

"spatial":

Semantic Attribute:	dcterms:spatial
Definition:	The geographical area covered by the dataset.
Range:	Xsd:anyURI to use in case using a IRI reference [link] to a resource describing a location. It is recommended that links are to entries in a well maintained gazetteer such as Geonames. Or a dcterms:Location [A spatial region or named place]
Usage note:	The spatial coverage of a dataset may be encoded as an instance of dcterms:Location, or may be indicated using a IRI reference [link] to a resource describing a location. It is recommended that links are to entries in a well maintained gazetteer such as Geonames.
See also:	e.g. for bbox dcterms:spatial [[a dcterms:Location] dcat:bbox """POLYGON[[3.053 47.975 , 7.24 47.975 , 7.24 53.504 , 3.053 53.504 , 3.053 47.975]]""" ;]

"accrualPeriodicity":

Semantic Attribute:	dcterms:accrualPeriodicity
Definition:	The frequency at which dataset is published.
Range:	xsd:anyURI
Usage note:	We can use specific vocabulary e.g. in freq.ttl definitions like: http://purl.org/cld/freq/daily freq:monthly freq:weekly …….
See also:	See also freq.ttl or at frequency.ttl.txt

"temporalResolution":

Semantic Attribute:	dcat:temporalResolution
Definition:	Minimum time period resolvable in the dataset.
Range:	xsd:duration
Usage note:	If the dataset is a time-series this should correspond to the spacing of items in the series. For other kinds of dataset, this property will usually indicate the smallest time difference between items in the dataset.
See also:	

"theme": [

Semantic Attribute:	dcat:theme
Definition:	A [sub-]category of the resource. A resource can have multiple themes.

Range:	would be better to have xsd:anyURI with URIs that represent the various terms in a vocabulary [to be defined with Pilot partners for terms related to domains]
Usage note:	Use this for domain specific categories. E.g. subcategories like production machines, assembly lines, … To be defined by each application domain. Theme can be used multiple times to provide multiple subcategories. The set of themes used to categorize the resources are organized in a skos:ConceptScheme, skos:Collection, owl:Ontology or similar, describing all the categories and their relations in the catalog.
See also:	

],

"distribution": [[Distribution: A specific representation of a dataset. A dataset might be available in multiple serializations that may differ in various ways,
including natural language, media-type or format, schematic organization, temporal and spatial resolution, level of detail or profiles [which might specify any
or all of the above].

{

"title":

Semantic Attribute:	dcterms:title
Definition:	A name given to the distribution
Range:	Xsd:string [rdfs:Literal]
Usage note:	Title
See also:	

"description":

Semantic Attribute:	dcterms:description
Definition:	A free-text account of the distribution.
Range:	Xsd:string [rdfs:Literal]

Usage note:	Description Text of Data Set
See also:	

"license":

Semantic Attribute:	dcterms:license
Definition:	A legal document under which the distribution is made available.
Range:	dcterms:LicenseDocument
Usage note:	For interoperability, it is recommended to use canonical IRIs of well-known licenses such as those defined by Creative Commons. Information about licenses and rights SHOULD be provided on the level of Distribution. Information about licenses and rights MAY be provided for a Dataset in addition to but not instead of the information provided for the Distributions of that Dataset. Providing license or rights information for a Dataset that is different from information provided for a Distribution of that Dataset SHOULD be avoided as this can create legal conflicts. See also guidance at § 9. License and rights statements.
See also:	§ 6.8.7 Property: rights § 6.4.19 Property: license **ToDo: Describe a list of possible licenses here.**

"accessRights":

Semantic Attribute:	`dcterms:accessRights`
Definition:	Information about who can access the resource or an indication of its security status.
Range:	dcterms:LicenseDocument

Usage note:	Information about licenses and rights *MAY* be provided for the resource. See also guidance at § 8. License and rights statements. to express statements concerning only access rights [e.g., whether data can be accessed by anyone or just by authorized parties]; Access rights can also be expressed as code lists / taxonomies. Examples include the access rights code list [*EUV-AR*] used in [*DCAT-AP*] and the Eprints Access Rights Vocabulary Encoding Scheme.
See also:	§ 6.4.20 Property: rights `dcterms:accessRights <http://publications.europa.eu/resource/authority/access-right/PUBLIC> ; dcterms:conformsTo <http://www.opengis.net/def/serviceType/ogc/csw> ;`

"downloadType":

Semantic Attribute:	core:downloadType
Definition:	Information about Download Type [if means like as 'Stream' or 'Bulk' dataset download]
Range:	xsd:string
Usage note:	To use set of words like 'Stream' and 'Bulk' ..
See also:	

"dataStream":

Semantic Attribute:	core:dataStream
Definition:	Boolean attribute to check if the dataset is offered as stream or not
Range:	

Usage note:	Should be the Boolean attribute to check if the dataset is offered as stream or not in the "Distribution" class block
See also:	

"conformsTo":

Semantic Attribute:	`dcterms:conformsTo`
Definition:	An established standard to which the distribution conforms. [Very OPTIONAL]
Range:	`dcterms:Standard` [A basis for comparison; a reference point against which other things can be evaluated.]
Usage note:	This property *SHOULD* be used to indicate the model, schema, ontology, view or profile that this representation of a dataset conforms to. This is [generally] a complementary concern to the media-type or format. This is a link to a specific file that describes the data in a domain specific format. Can also be a text in a freely definable format.
See also:	§ 6.8.17 Property: format, § 6.8.16 Property: media type also check file-type.ttl.txt

"mediaType":

Semantic Attribute:	dcat:mediaType
Definition:	The media type of the distribution as defined by IANA [IANA-MEDIA-TYPES].
Range:	Xsd:anyURI [dcterms:MediaType]
Usage note:	dcat:mediaType *SHOULD* be used if the type of the distribution is defined by IANA [*IANA-MEDIA-TYPES*]. https://www.iana.org/assignments/media-types/

	e.g. mediaType <http://www.iana.org/assignments/media-types/application/ld+json> E.g. a link to a XML, csv or JSON file, to describe the data format.
See also:	§ 6.8.16 Property: media type, § 6.8.15 Property: conforms to check also file-type.ttl.txt

"packageFormat":

Semantic Attribute:	dcat:packageFormat
Definition:	The package format of the distribution in which one or more data files are grouped together, e.g. to enable a set of related files to be downloaded together.
Range:	Xsd:anyURI [dcterms:MediaType]
Usage note:	In case it is compressed, this could be .zip, .rar, … This property to be used when the files in the distribution are packaged, e.g. in a TAR file, a Frictionless Data Package or a Bagit file. The format *SHOULD* be expressed using a media type as defined by IANA [IANA-MEDIA-TYPES], if available.
See also:	§ 6.8.18 Property: compression format.

"accessService": (info inside distribution for service that serve the distributions of the datasets)

{

"conformsTo":

Semantic Attribute:	dcterms:conformsTo
Definition:	An established standard to which the distribution conforms.
Range:	dcterms:Standard [A basis for comparison; a reference point against which other things can be evaluated.]

Usage note:	This property *SHOULD* be used to indicate the model, schema, ontology, view or profile that this representation of a dataset conforms to. This is [generally] a complementary concern to the media-type or format.
See also:	§ 6.8.15 Property: conforms to

"endpointDescription":

Semantic Attribute:	dcat:endpointDescription
Definition:	A description of the services available via the end-points, including their operations, parameters etc.
Range:	xsd:string
Usage note:	The endpoint description gives specific details of the actual endpoint instances, while dcterms:conformsTo is used to indicate the general standard or specification that the endpoints implement. An endpoint description may be expressed in a machine-readable form, such as an OpenAPI [Swagger] description [OpenAPI], an OGC GetCapabilities response [WFS], [ISO-19142], [WMS], [ISO-19128], a SPARQL Service Description [SPARQL11-SERVICE-DESCRIPTION], an [OpenSearch] or [WSDL20] document, a Hydra API description [HYDRA], else in text or some other informal mode if a formal representation is not possible.
See also:	

"endpointURL":

Semantic Attribute:	dcat:endpointURL
Definition:	The root location or primary endpoint of the service [a Web-resolvable IRI].
Range:	xsd:anyURI
Usage note:	The URL address of the resource via service

See also:	

"servesDataset":

Semantic Attribute:	dcat:servesDataset
Definition:	A collection of data that this data service can distribute. The dataset ID or name and files.
Range:	xsd:string
Usage note:	To point to the datasets that are served via the data service.
See also:	

"serviceSpecs": "string"

Semantic Attribute:	core:serviceSpecs
Definition:	Description of service specification for more detail on the data service implementations
Range:	
Usage note:	To extend in case the description of data service to add more details descriptions on the system. To describe more details about the Service, e.g. QoS, …
See also:	In progress

"dataExchangeSpec": (info inside accessService block for data Exchange Specifacations that serve the distributions of the datasets)

{

"encAlg": "string"

Semantic Attribute:	core:encAlg

Definition:	Encryption algorithm used to encrypt blocks. Either AES-128-GCM ('A128GCM') or AES-256-GCM ('A256GCM)
Range:	
Usage note:	Encryption algorithm used to encrypt blocks. Either AES-128-GCM ('A128GCM') or AES-256-GCM ('A256GCM)
See also:	In progress

"signingAlg": "string"

Semantic Attribute:	core:signingAlg
Definition:	Signing algorithm used to sign the proofs. Like ECDSA secp256r1 with key lengths: either 'ES256', 'ES384', or 'ES512'
Range:	
Usage note:	Signing algorithm used to sign the proofs. It is ECDSA secp256r1 with key lengths: either 'ES256', 'ES384', or 'ES512'
See also:	In progress

"hashAlg": "string"

Semantic Attribute:	core:hashAlg
Definition:	Hash algorithm used to compute digest/commitments. It's SHA2 with different output lengths: either 'SHA-256', 'SHA-384' or 'SHA-512'
Range:	
Usage note:	Hash algorithm used to compute digest/commitments. It's SHA2 with different output lengths: either 'SHA-256', 'SHA-384' or 'SHA-512'

See also:	In progress

"ledgerContractAddress": "string"

Semantic Attribute:	core:ledgerContractAddress
Definition:	The ledger smart contract address (hexadecimal) on the DLT
Range:	
Usage note:	The ledger smart contract address (hexadecimal) on the DLT
See also:	In progress

"ledgerSignerAddress": "string"

Semantic Attribute:	core:ledgerSignerAddress
Definition:	The orig (data provider) address in the DLT (hexadecimal).
Range:	
Usage note:	The orig (data provider) address in the DLT (hexadecimal).
See also:	In progress

"pooToPorDelay": "number"

Semantic Attribute:	core:pooToPorDelay
Definition:	Maximum acceptable delay between the issuance of the proof of origin (PoO) by the orig and the reception of the proof of reception (PoR) by the orig
Range:	
Usage note:	Maximum acceptable delay between the issuance of the proof of origin (PoO) by the orig and the reception of the proof of reception (PoR) by the orig
See also:	In progress

"pooToPopDelay": "number"

Semantic Attribute:	core:pooToPopDelay
Definition:	Maximum acceptable delay between the issuance of the proof of origin (PoP) by the orig and the reception of the proof of publication (PoR) by the dest
Range:	
Usage note:	Maximum acceptable delay between the issuance of the proof of origin (PoP) by the orig and the reception of the proof of publication (PoR) by the dest
See also:	In progress

"pooToSecretDelay": "number"

Semantic Attribute:	core:pooToSecretDelay
Definition:	If the dest (data consumer) does not receive the PoP, it could still get the decryption secret from the DLT. This defines the maximum acceptable delay between the issuance of the proof of origing (PoP) by the orig and the publication (block time) of the secret on the blockchain.
Range:	
Usage note:	If the dest (data consumer) does not receive the PoP, it could still get the decryption secret from the DLT. This defines the maximum acceptable delay between the issuance of the proof of origing (PoP) by the orig and the publication (block time) of the secret on the blockchain.
See also:	In progress

} }

}],

"datasetInformation": [

[A description of types which represent attributes of observations , measurements , fields,.. in the dataset.. to describe the informations and structure of the raw real data in the datasets]

{

"measurementType":

Semantic Attribute:	core:measurementType
Definition:	The data types which represent attributes of observations, measurements, in the dataset.
Range:	xsd:anyURI
Usage note:	Simple text strings Or use of specific vocabularies collected to support domains For example like the vocab created for wellbeing [ex <http://www.i3-market.eu/wellbeing_annotations/Sleep_count_micro_awakenings> Specific types of measurements for a certain domain. Parameter can be put multiple times in the API call.
See also:	See also example for Wellbeing in DataRecords_Annotations_for_Wellbeing_datasets_measurements_02.ttl attached to this page but also in gitlab https://gitlab.com/i3-market/code/data-models/-/blob/master/Version-1/DataRecords_Annotations_for_Wellbeing_datasets_measurements_02.ttl

"measurementChannelType":

Semantic Attribute:	core:measurementChannelType
Definition:	The data measurement Channel types in the dataset.
Range:	xsd>string or xsd>anyURI

Usage note:	Simple text strings Or use of specific vocabularies collected to support domains
See also:	

"sensorId":

Semantic Attribute:	core>sensorID
Definition:	Sensor ID
Range:	xsd>string
Usage note:	ID used to identify the sensors in original data sets source
See also:	

"deviceId":

Semantic Attribute:	core>deviceID
Definition:	Device ID
Range:	xsd>string
Usage note:	ID used to identify the devices in original data sets source
See also:	

"cppType":

Semantic Attribute:	core:cppType
Definition:	The cpp types in the dataset. Derived from AGORA requirements
Range:	xsd>string or xsd>anyURI
Usage note:	Simple text strings Or use of specific vocabularies collected to support domains
See also:	

"sensorType": "string"

Semantic Attribute:	core:sensorType
Definition:	The cpp types in the dataset. Derived from Wellbeing and AGORA requirements
Range:	xsd>string or xsd>anyURI
Usage note:	Simple text strings Or use of specific vocabularies collected to support domains
See also:	

}] }

}