Prefixes

FOAF:	The Friend Of a Friend Ontology. `http://xmlns.com/foaf/spec/`
DMOP:	The Data Mining Optimization Ontology. `http://www.e-lico.eu/ontologies/dmo/DMOP/DMKB.owl`
SWO:	The Software Ontology. `http://theswo.sourceforge.net/`
SKOS:	The Simple Knowledge Organization System. `http://www.w3.org/2004/02/skos/core#`

1 Train - Business

User Stories	Attributes
- As a Train User, I want to have information on the owner of the train and the models, so that I can distinguish between these two - As a Train User, I want to know who the author of the Train is, so that i can decided whether i can trust the Train - As a general participant of the PHT, I want information about the author of a train, so that there is increased transparency on the train	`creator: FOAF:Agent (1..n)`
As a general User of the PHT, I want a good versioning system of my trains, so that I can reproduce results	`version: String (1)`
- As a Train User, I want to know what the purpose of the Train is, so that information does not get lost over time - As a Train User, I want to know what the purpose of the Train is, so that I can decide if I want to reuse it	`description: String (1..n)` `title: String (1)`

• As a Train User, I want to know if the Train is certificated, so that i can decided whether i can trust the Train	`Certificate: pht:Certificate (1)`
	`Certificate.data: String (1)`
	`Certificate.issuer: String (1)`
	`Certificate.begins: Date (1)`
	`Certificate.expires: Date (1)`

• As a Train Dispatcher, I want to have different Metadata schemes for static "blueprints" of train and concrete instances, because of the different key aspects in the needed Metadata	In the Metadata Schema it will be differentiated between a Train (static) and a Train execution (dynamic)
• As a general participant of the PHT, I want information about the creation date of a train, so that there is increased transparency on the train	`published: Date (1)`
• As a Data Scientist, I want to have a identification mechanism for the train	`id: URL (1)`

2 Train - Technical

User Stories	Attributes
• As a Train User, I want to differ in the Metadata between Train and underlying model, so that I can properly reuse models • As a general User of the PHT, I want to differ between a train and the underlying program/algorithm so that the program can be easily reused across different trains	`model: Model (1..n)`
• As a general User of the PHT, I want a good versioning system of my trains, so that I can reproduce results	`version: String (1)`
• As a Train User, I want to have information on the requirements and licences of each models, so that I can meet all requirements, because models can have different requirements and licenses	`Model.license: SWO:license (0..1)`
• As a Train User, I want to have information on Trains about the used models, so that I can understand that Train	`Model.description: String (1..n)`
• As a Train User, I want to have information about the quality of the output data of a train, so that I can decide if I want to use that train • As a Train User, I want to have Information about the kind of output the train generates and if it generates an output at all, so that I can decide if I want to reuse it	`Model.characteristic:` `DMOP:AlgorithmCharacteristic (0..n)`

• As a Train User, I want to have information about the pre processing steps a train performs, so that I know what a Train does	`Model.preProcessingAlgorithm: DMOP:Algorithm (0..n)`

• As a Train User, I want to have Information about the dispatching pattern about a train so that I can decide if I want to reuse it	`dispatchingPattern: TrainDispatchingPattern (0..1)`
	
	`TrainDispatchingPattern` as a class, with individuals for different dispatching patterns:
	`TrainDispatchingPatternParallel`
	`TrainDispatchingPatternLinear`
	`TrainDispatchingPatternMixed`

• As a Train User, I want to have detailed Information about the Workflow the train incorporates, so that I can decide if I want to reuse it and so that I can understand that train better
 	
• As a general participant of the PHT, I want information about the algorithm that a train uses, so that i can trust the train and understand the train better
	`Model.algorithm: DMOP:Algorithm (1..n)`
	`Model.dataInteractionRead: boolean (0...1)`
	`Model.dataInteractionWrite: boolean (0...1)`
	`Model.dataInteractionDelete: boolean (0...1)`

• As a Train User, I want to have Information with what kind of data the train interacts so that I can search for trains suitable for the data that I have access to • As a Train User, I want to know what kind of Interaction Pattern the Train Uses so that I can check if it works with the Stations I want it to visit	`Model.expectedDataSet: pht:ExpectedDataSet (0..n)`
• As a general participant of the PHT, I want to have open accessible performance metrics for each train so that I can assess the performance of trains	`Model.minimumEstimatedGFLOPS: float (0..n)`

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3 Train - Dynamic execution

User Stories	Attributes

• As a general User of the PHT, I want to have mandatory information about the purpose of each execution of a train, so that this information is for all participating parties in an analysing task accessible	`TrainExecution.description: String (1..n)`
	 `TrainExecution.creator: FOAF:Agent (1)`
	 `TrainExecution.id: URL (1)`

• As a Train Operator, I want to decide how many telemetric data the train send to me so that no data is send which is not needed and the telemetric data is suitable for the train	`TrainExecution.enableEvent: ExecutionEvent(0..n)`

• As a Train Operator, I want to have information after the execution of the Train, if the execution at all stations was successful, so that I know that the Train worked correctly
 	
• As a Train Operator, I want to know after the execution if the train did follow the route, so that I know that the Train worked correctly
 	
• As a Train Operator, I want to have Information which stations my train visited and if there were problems at any station, and if yes, also what kind of problems
 	
• As a Station Owner, I want to know how the train did perform before it comes to my station, so that I can estimate how the train will perform at my station
 	
• As a Station Owner, I would like to access Information about past executions of the train so that I know what the purpose of the train, which deals with my data, is
 	
• As a Train User, I want to trace the location of my train at any given time, so that I am able to understand my trains execution
 	
• As a PHT user, I want to have information on the current position of my train so that there is a increased traceability my train and to enable me to take action if the execution is not continuing
	`TrainExecution.state:`
	`StateEnum (1)`
	`TrainExecution.events: ExecutionEvent`
	`(0..n)`

• As a Train User, I want to have a record of memory usage and run time, so that I can examine the performance of my train and tweak the train if necessary • As a Train User, I want to have access to live telemetric data, so that I can inspect how the execution of my train makes progress • As a general participant of the PHT, I want an open accessible, detailed record of each execution of a train, so that I have a way of assessing different trains • As a Train Operator, I want to know after the execution if the train did follow the route, so that I know that the Train worked correctly	(Continuation of the last row)
• As a Station Owner, I want to know when a train will visit my station, so that I can make preparations if necessary • As a Station Owner, I want to know the route of each Train which visits my station, so that I know what goal of the Train is • As a station owner, I want to have information about what trains are planning to visit my station, so that I have better control and overview over the station	`TrainExecution.plannedRoute:` `ExecutionPlanStep(1..n)`
• As a Train user, I want that the execution history of my train is not visible to everybody, so that my intentions and privacy are kept secret	`TrainExecution.public: boolean (1)`

4 Station - Business

User Stories	Attributes
- As a Train User, I want to know who the owner is, so that I can decide if I will use that station - As a Train User, I want to know who the owner of a station is and under which licence that Station can be accessed so that i can decide if I will let the Train visit that station	`creator: FOAF:Agent (1..n)`
As a Train Dispatcher/Data Scientist, I want to have a contact person for each Station in the Metadata, so that I can contact him/her if issues arise	`responsibleForStation: FOAF:Agent (1)`
As a Train User, I want to have Information about the geographical location of a Station so that I know if I have to consider national regulations	`longitude: float (1..n)` `latitude: float (1..n)`
As a Train User, I want to have Information about the general purpose of the station so that I can know if the Station is useful for me	`description: String (1)`

5   Station - Runtime Environment

User Stories	Attributes
- As a Train User, I want to have information about the computational environment a station provides, so that I can decide if the Station will be capable of running my model - As a Train User, I want to have Information about the computational mechanisms a station provides, so that I can decide if the station will be able to run my train or if I need to tweak my train - As a Data Scientist, I want to have Information on the Computational Environment of a station, so that i can identify which stations are suitable for the execution of a programm - As a Train User, I want to have a general description of the computing capabilities of a station, so that I can decide if the station will be able to run my train - As a Station Owner, I want only give information on the performance capabilities of my station in a categorical manner,so that I avoid giving away too much information about my infrastructure	`ComputationalEnvironment.estimated-GFLOPS: Float (0...n)` `ComputationalEnvironment.hasCUDA-Support: boolean (0..n)`
- As a Train User, I want to have information about what kind of technologies the station supports, so that I can ensure that the Station will be capable of running my model - As a Data Scientist, I want to have a list of available systems at a station, so that i can better develop suitable programs/algorithms and can decide which station are suitable for my programs	`ComputationalEnvironment.programmingLanguageSupport: SWO:ProgrammingLanguage (0..n)`

• As a Train User, I want to have information about how many models can be run simultaneously at a station, so that I can ensure that the Station will be capable of running my model	`ComputationalEnvironment` `.maximumNumberOfModelsSupported:` `Integer (0..1)`
• As a Train User, I want to have information about the maximal model size a station supports, so that I can ensure that the Station will be capable of running my model	`ComputationalEnvironment` `.maximumModelSizeKilobytesSupported:` `Integer (0..1)`

6 Station - Data Information

User Stories	Attributes

- As a Train User, I want to know how to access the data in a station, so that I can ensure that my Train will work with this station - As a Train User, I want to have information about how do access the data in a station, so that I can ensure that my Train will be able to access the data - As a Train User, I want to have Information about the Format of the data a station provides, so that I can decide if my train will be able to access the data or if I need to tweak my train - As a Data Scientist, I want to have detailed information addressing the data format of the data at each station so that I know how I can access this data with my program - As a Train User, I want information about the structure of the data a Station provides, so that I can decide if I can use that Station - As a Train User, I want to have a description of the data a station provides, so that I can decide if that data is useful for me	`DataSet.accessURL: String (0..n)`
	
	`TabularDataSet.dataFormat:`
	`DMOP:DataFormat (0..1)`
	`TabularDataSet.attribute:`
	`TabularDataSetAttribute (0..n)`
	`TabularDataAttribute.dataType:`
	`DMOP:DataType (0..1)`
	`TabularDataAttribute.key:`
	`String (0..1)`
	`TabularDataAttribute.description:`
	`String (0..n)`
	
	`FileDataSet.fileType:`
	`String (0..1)`

- As a Train User, I want to know what the policies are for accessing data in a station, so that I can ensure that I meet those policies - As a Train User, I want to have Information about whether some agreements have to be made before I can use that Station so that I can do this	`DataSet.accessConstrain:`
	`AccessConstrainEnum (1)`
	`DataSet.license: SWO:license (0..1)`

• As a Train User, I want to have descriptions of the data sets (maybe multiple) in a station, so that I can decide if the data is useful for me • As a Train User, I want to have a semantic description of the data, so that I can understand if I can use the data	`DataSet.description: String (0..1)` `DataSet.theme: SKOS:Concept (0..n)`
• As a Train User, I want to have information if the data is anonymized and if yes with what kind of technology, so that I can consider that in my analysis	`DataSet.anomyzationMethodUsed:` `DifferentrialPrivacyMethod (0..n)`
• As a Train User, I want to have information about the quality of data at a station in the form of ranges, so that I can decide if I want to use that data • As a Train User, I want to have Information about the size of the data a station provides, so that I can decide if the Station is useful for me	`DataSet.charateristic:` `DMOP:DataSetCharacteristic (0..n)`
• As a Train User, I want that the policies of the stations are open accessible, so that I can decide which Station my Train will visit • As a Train User, I want to have Information if I am entitled to access data at a Station and if yes, under what constraints	`DataSet.right: String (0..n)`