



Disciplina - Sistemas Ciber Físicos

Pós-graduação em Engenharia da Manufatura Avançada

HUB - Tecnologia e Inovação



Projeto de Sistemas Ciber Físicos (Software ou AAS).

v2025-02-25.alpha

Pre-release

What's Changed







- Set Submodel/Kind as per action by [@juileetikekar](#) in [#225](#)
- Fix the issue 226 by [@juileetikekar](#) in [#228](#)
- Fix for the issue 235 by [@juileetikekar](#) in [#236](#)
- Features and fixes: SAMM, IEC61360, AsciiDoc, Fixes, no empty lists, package format by [@MichaelHoffmeisterFesto](#) in [#217](#)
- Licences by [@martafullen](#) in [#244](#)
- solution filter by [@martafullen](#) in [#191](#)
- Small enhancement of AsciiDoc features by [@MichaelHoffmeisterFesto](#) in [#252](#)
- Make language support more inclusive by [@MichaelHoffmeisterFesto](#) in [#253](#)
- Jtikekar/logo update by [@juileetikekar](#) in [#271](#)

Full Changelog: [v2024-06-10.alpha...v2025-02-25.alpha](#)

Criação do AASX

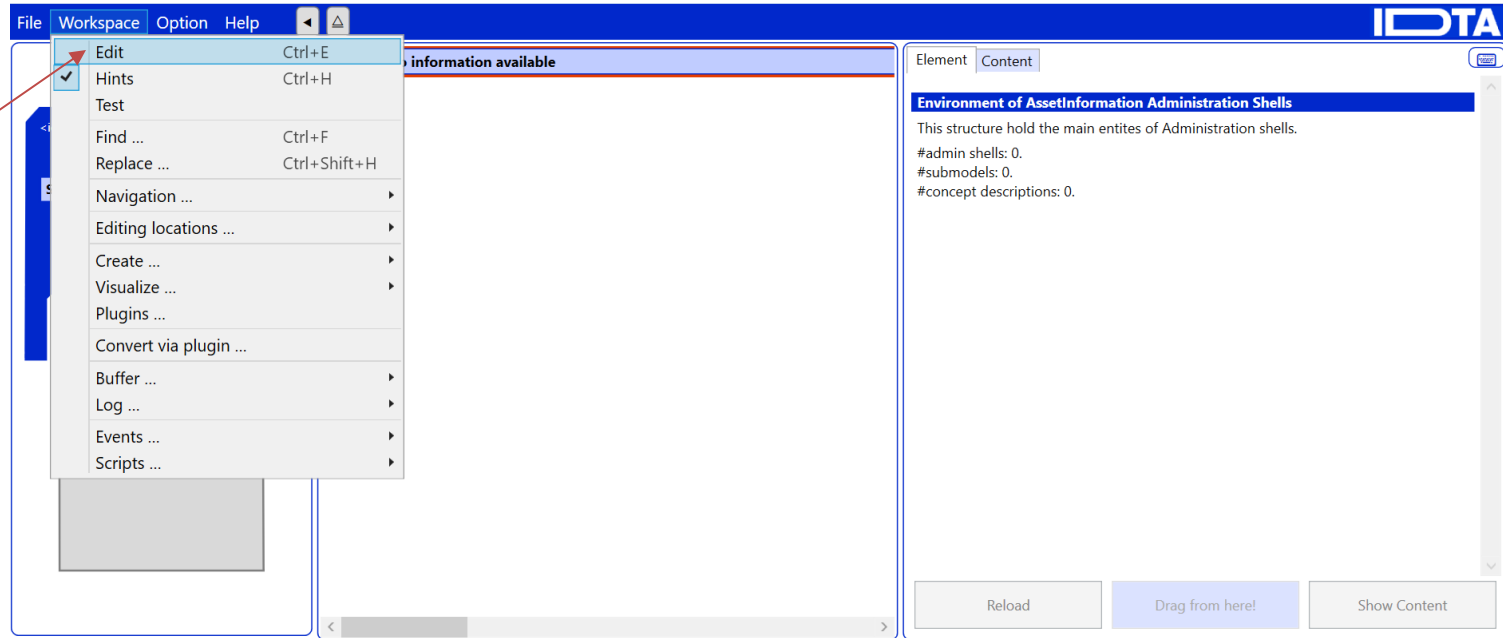
▼ Assets

6

 aasx-package-explorer-blazorexplorer-small.2025-02-25.alpha.zip	109 MB	2 weeks ago
 aasx-package-explorer-blazorexplorer.2025-02-25.alpha.zip	366 MB	2 weeks ago
 aasx-package-explorer-small.2025-02-25.alpha.zip	90.2 MB	2 weeks ago
 aasx-package-explorer.2025-02-25.alpha.zip	365 MB	2 weeks ago
 Source code (zip)		2 weeks ago
 Source code (tar.gz)		2 weeks ago

Criação do AASX

Para iniciar a criação de um novo AAS, selecionamos a opção “Edit” em “Workspace”



Criação do AASX

Então, selecionamos a opção “Add AAS” para adicionar um AAS ao arquivo atual

The screenshot displays the IDTA (Industrial Data Transfer Architecture) software interface. The main window is divided into several panels. On the left, there is a 'Package' tree view showing a hierarchy of elements: 'Env "Environment"', 'Env "AdministrationShells"', 'Env "All Submodels"', 'Env "ConceptDescriptions"', and 'Env "Supplemental files"'. The 'Env "AdministrationShells"' element is selected. Below this, there is a 'Submodel' section with two 'Submodel element' entries. The right panel shows the 'Content' tab for the selected element, displaying a message: 'There are no Administration Shells in this AAS environment. List is null! You should consider adding an Administration Shell by clicking 'Add AAS' on the edit panel below.' Below this message, there are two buttons: 'Add AAS' and 'Add ConceptDescription'. A red arrow points from the text 'Para salvar as alterações sempre click no botão "Take over changes"' to the 'Add AAS' button. At the bottom of the right panel, there are two buttons: 'Take over changes' and 'Undo changes'. A blue arrow points from the text 'Para salvar as alterações sempre click no botão "Take over changes"' to the 'Take over changes' button.

File Workspace Option Help

Package

- Env "Environment"
 - Env "AdministrationShells"
 - Env "All Submodels"
 - Env "ConceptDescriptions"
 - Env "Supplemental files"

Submodel

- Submodel element
- Submodel element

Environment of AssetInformation Administration Shells

There are no Administration Shells in this AAS environment. List is null! You should consider adding an Administration Shell by clicking 'Add AAS' on the edit panel below.

Entities:

- Add AAS
- Add ConceptDescription

Adds an AAS with blank information.

Take over changes

Undo changes

Para salvar as alterações sempre click no botão "Take over changes"

Criação do AASX

É necessário adicionar o “idShort”, bem como gerar o “globalAssetID”

Element Content

functionalities below.

SubmodelRef:

Reference to existing Submodel

Create new Submodel of kind Template

Create new Submodel of kind Instance

Copy from existing Submodel:

Copy single Copy recursively

Referable:

idShort: ModelAAS Fix

The use of a display name is recommended to express a human readable name for the Referable in multiple languages.

displayName: Create w/ default!

category: CONSTANT

The use of an description is recommended to allow the consumer of an Referable to understand the nature of it.

description: Create w/ default!

Known extensions « experimental » :

List of extensions is null! For modelling Submodel template specifications (SMT), a set

Take over changes Undo changes

Element Content

AssetInformation Delete

Kind (of AssetInformation):

kind: Instance

globalAssetId:

globalAssetId: https:// Generate Input Rename Add existing Delete

Actions: Print asset code Generate an id based on the customizable template

assetType:

assetType: Create data element!

specificAssetId:

specificAssetId: Create data element!

DefaultThumbnail: Resource element

defaultThumbnail: Create empty Resource element!

Take over changes Undo changes

Criação do AASX

Após criar o AAS, vamos adicionar Submodelos do tipo Instância

1

2

The screenshot displays the AASX editor interface. On the left, a tree view shows the structure of the AAS: "Package" (expanded) contains "Environment" (expanded), which contains "AdministrationShells" (expanded). Inside "AdministrationShells", there is an "AAS" element named "ModelAAS" with the URL "https://example.com/ids/aas/6230_8111_3052_0858". Below it are "Asset" (AssetInformation, https://example.com/ids/asset/2530_8111_3052_0858), "Env" (All Submodels), "Env" (ConceptDescriptions), and "Env" (Supplemental files). A red arrow labeled '1' points to the "ModelAAS" element.

The right pane shows the configuration for the selected "ModelAAS" element. The "Element" tab is active, displaying the "AssetAdministrationShell (according IEC63278)" configuration. The "Editing of entities" section includes buttons for "Move up", "Move down", "Move top", "Move end", "Delete", "Cut", "Copy", "Paste above", "Paste below", and "Paste into". A red box with white text states: "The list of Submodel references is set to null. Creation will be done using respective functionalities below." Below this, the "SubmodelRef:" section has two buttons: "Reference to existing Submodel" and "Create new Submodel of kind Instance". A red arrow labeled '2' points to the "Create new Submodel of kind Instance" button. The "Copy from existing Submodel:" section has buttons for "Copy single" and "Copy range". The "Referable:" section has a "idShort:" field with the value "ModelAAS" and a "Fix" button. Below this, a blue box with white text states: "The use of a display name is recommended to express a human readable name for the Referable in multiple languages." The "displayName:" field has a "Create w/ default!" button. At the bottom, there are "Take over changes" and "Undo changes" buttons.

Criação do AASX

É necessário preencher o campo de idShort e gerar um id para o submodelo

The screenshot shows the AASX creation interface. On the left is a tree view of the package structure. On the right is a form for the 'Monitoring' submodel. The form has several sections: 'Referable', 'Identifiable', 'Kind (of model)', and 'Semantic ID'. The 'idShort' field is highlighted with a blue arrow and the number 1. The 'category' field is highlighted with a blue arrow and the number 2. The 'id' field is highlighted with a blue arrow and the number 3. The 'id' field has a 'Generate' button next to it. The 'id (Base64)' field contains the value 'aHR0cHM6Ly9leGFTcGxLmNvbS9pZHMvc20vNmJ4MmF84MTExZmWNTJlNTI2'. The 'kind' field is set to 'Instance'. The 'semantic ID' field is empty. The form also has buttons for 'Take over changes' and 'Undo changes'.

Package

- Env "Environment"
 - Env "AdministrationShells"
 - AAS "ModelAAS" [https://example.com/ids/aas/6230_8111_3052_0858] of [https://example.com/ids/aas/6230_8111_3052_0858]
 - Asset "AssetInformation" [https://example.com/ids/asset/2530_8111_3052_6522]
 - SM "Monitoring" [https://example.com/ids/sm/6380_8111_3052_5269]
 - Env "All Submodels"
 - SM <no idShort> [https://example.com/ids/sm/6380_8111_3052_5269]
 - Env "ConceptDescriptions"
 - Env "Supplemental files"

Element Content

Submodel & -elements: Upgrade qualifiers Remove qualifiers Remove extensions Fix References

Submodel

Referable:

idShort: Monitoring Fix

The use of a display name is recommended to express a human readable name for the Referable in multiple languages.

displayName: Create w/ default!

The use of category is deprecated. Do not plan to use this information in new developments.

category: CONSTANT

The use of an description is recommended to allow the consumer of an Referable to understand the nature of it.

description: Create w/ default!

Identifiable:

id: [https://example.com/ids/sm/6380_8111_3052_5269] Generate Rename

id (Base64): aHR0cHM6Ly9leGFTcGxLmNvbS9pZHMvc20vNmJ4MmF84MTExZmWNTJlNTI2

Check if providing administrative information on version/ revision would be useful. This allows for better life-cycle management.

administration: Create data element!

Kind (of model):

kind: Instance

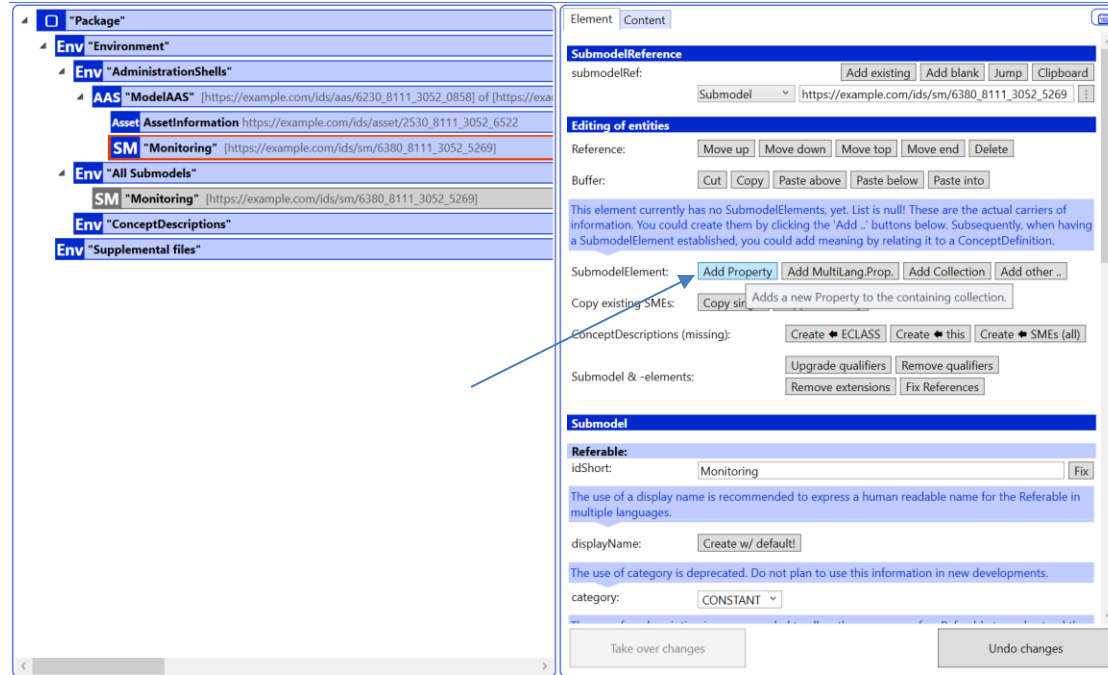
Semantic ID:

Check if you want to add a semantic reference to an external concept repository entry. The semanticid may be either a reference to a submodel with kind=Type (within the same or another

Take over changes Undo changes

Criação do AASX

Para adicionar uma propriedade, selecione o botão “Add Property”



Criação do AASX

Preencha os campos para da propriedade

The screenshot shows a tree view of the AAS structure. The root is "Package", which contains an "Env" "Environment". Under "Environment" is an "Env" "AdministrationShells". Under "AdministrationShells" are three items: "AAS" "ModelAAS" (with a URL), "SM" "Monitoring" (with a URL), and "Prop" "<no idShort>". Under "ModelAAS" is an "Asset" "AssetInformation" (with a URL). Under "Monitoring" is an "SM" "Monitoring" (with a URL). Under "AssetInformation" is an "Env" "All Submodels". Under "All Submodels" are three items: "SM" "Monitoring" (with a URL), "Env" "ConceptDescriptions", and "Env" "Supplemental files".

The screenshot shows the "Submodel Element (Property)" form. The "Referable" section has a red warning box: "The idShort is mandatory for all Referables which are not Identifiable. It is a short, unique identifier that is unique just in its context, its name space." The "idShort" field is set to "Temperature". The "displayName" field is set to "Create w/ default!". The "category" field is set to "VARIABLE". The "description" field is set to "Create w/ default!". The "Semantic ID" section has a warning box: "Check if you want to add a semantic reference to an external concept repository entry. The use of semanticId for SubmodelElements is mandatory! Only by this means, an automatic system can identify and understand the meaning of the SubmodelElements and, for example, its unit or logical datatype. The semanticId shall reference to a ConceptDescription within the AAS environment or an external repository, such as IEC CDD or ECLASS or a company / consortia repository." The "semanticId" field is set to "Create w/ default!". The "Supplemental Semantic IDs" section has a warning box: "Check if a supplemental semanticId is appropriate here. This only make sense, when the primary semanticId does not semantically identifies all relevant aspects of the AAS element." The "supplementalSem.Id" field is set to "Create w/ default!". The "Qualifiable" section is empty. At the bottom are "Take over changes" and "Undo changes" buttons.

The screenshot shows the "Property" form. The "Qualifiable" section is empty. The "HasDataSpecification (Reference)" section has a "DataSpecification" field set to "Create w/ default!". The "Referable (continue)" section has a warning box: "List of extensions is null! For modelling Submodel template specifications (SMT), a set of particular attributes to the elements of SMTs are specified. These attributes can be added as specific Qualifiers or via adding an extension as a whole." The "Known extension" field is set to "SMT attributes". The "HasExtension" section has an "extensions" field set to "Create w/ default!". The "Property" section has a "valueType" field set to "xs:float". The "value" field is set to "0.0". The "valueId" field is set to "Create data element!". At the bottom are "Take over changes" and "Undo changes" buttons.

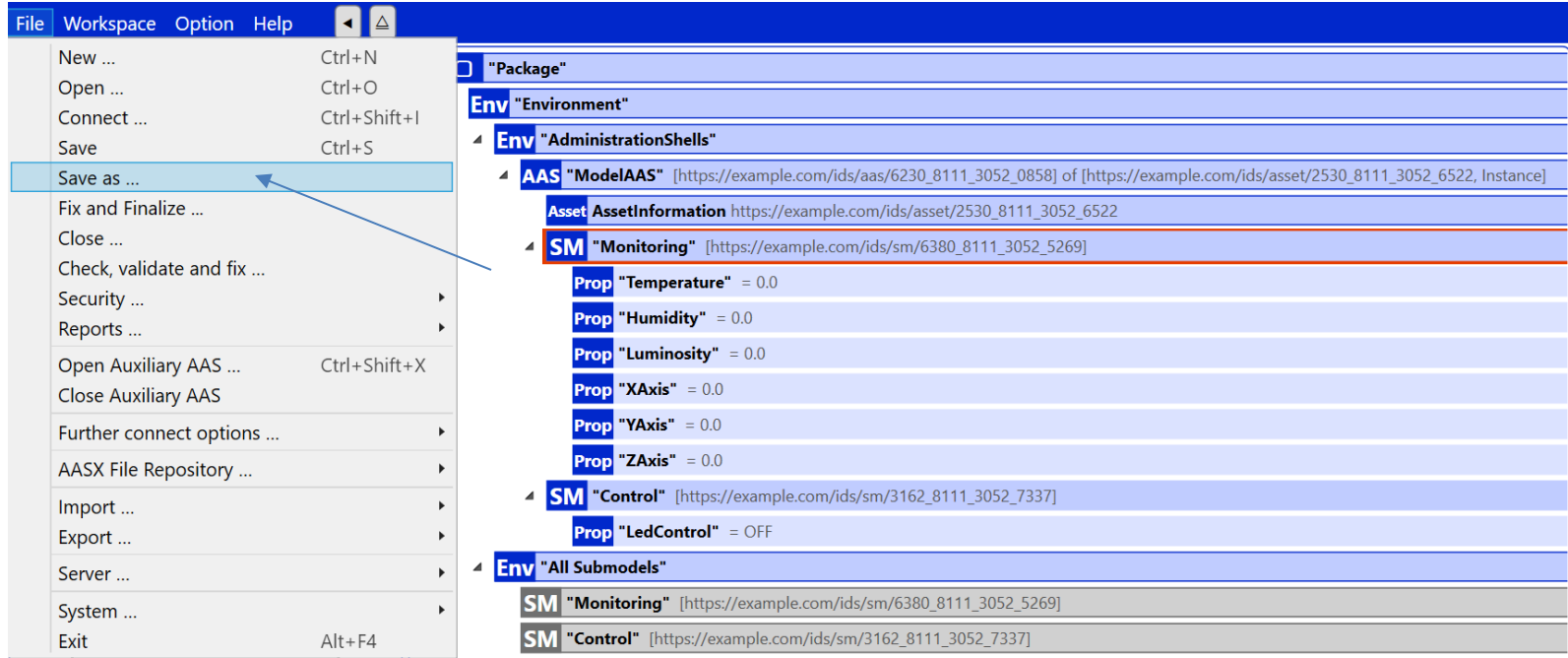
Criação do AASX

Repetindo os passos de criação de submodelo e propriedade, devemos construir um shell (AAS) no seguinte formato:

Package
Env Environment
Env AdministrationShells
AAS ModelAAS [https://example.com/ids/aas/6230_8111_3052_0858] of [https://example.com/ids/asset/2530_8111_3052_6522, Instance]
Asset AssetInformation https://example.com/ids/asset/2530_8111_3052_6522
SM Monitoring [https://example.com/ids/sm/6380_8111_3052_5269]
Prop Temperature = 0.0
Prop Humidity = 0.0
Prop Luminosity = 0.0
Prop XAxis = 0.0
Prop YAxis = 0.0
Prop ZAxis = 0.0
SM Control [https://example.com/ids/sm/3162_8111_3052_7337]
Prop LedControl = OFF
Env All Submodels
SM Monitoring [https://example.com/ids/sm/6380_8111_3052_5269]
SM Control [https://example.com/ids/sm/3162_8111_3052_7337]
Env ConceptDescriptions
Env Supplemental files

Criação do AASX

Para salvar o shell (AAS), basta seleccionar a opção “Save as” e escolher a pasta de destino



Obrigado.