Functionality Overview (SRR)

00_Arch - 00 - Architectural Features — Feature

The architecture of the SRR/SMUOS Framework is well-defined and described.
The architecture of the SRR/SMUOS Framework poses some requirements on the architecture of any SrrTrains layout/Simple Multiuser Scene.

00_Arch - 02 - Basic Initialization — Feature

The SRR/SMUOS Framework defines a mechanism for basically initializing external prototypes, after they have been loaded.
This mechanism is particularly necessary when the SRR/SMUOS Framework is used on web spaces, where the Web3D browsers load all external files asynchronously.
The mechanism of "basic initialization" is defined by a small state machine (MASTER/DEP state machine) that performs a little handshake protocol between a Script node in the loading file (MASTER) and another Script node in the depending file (DEP).

00_Arch - 05 - Tracer — Feature

The SRR/SMUOS Framework contains an X3D prototype for tracing purposes. It's the intention of the SmsTracer,
- to get familiar with SrrTrains/SMUOS software
- to debug SrrTrains/SMUOS software
- to document SrrTrains/SMUOS software

00_Arch - 10 - MMF Architecture — Feature

The SRR/SMUOS Framework requires from each and every SrrTrains layout / SMS, to be developed according to the "MMF paradigm" (model/module/frame paradigm).
This does not preclude having all three kinds of X3D/VRML scenery in one single file, in the case of very simple scenes.

00_Arch - 15 - Static Modules — Feature

Static modules are modules that are loaded and initialized immediately at the startup of the scene instance.

00_Arch - 20 - Dynamic Modules — Feature

Dynamic modules are modules that are loaded, initialized and unloaded on demand, at any instance during the lifetime of the scene instance.

00_Arch - 25 - SRR Objects / MIDAS Objects — Feature

Providing SRR Objects/MIDAS Objects, is the central service of the SRR/SMUOS Framework.
It's the SRR Objects/MIDAS Objects that are used by model authors and by module authors to provide interactive and animated MU capable models.

Functionality Overview (SRR)

00_Arch - 30 - Console Interface — Feature

Each SRR Object/MIDAS Object can provide parameters, that can be changed and read out by the console interface (a command line interface, that is provided by the Simple Scene Controller).

00_Arch - 35 - Static/Intrinsic Models — Feature

SRR Objects/MIDAS Objects can be used to create static/intrinsic models. Those will be MU capable, interactive and animated.

Static models are loaded and initialized immediately together with their parent module. However, they can be provided independently of their parent module and they may be used by more than one module.

Intrinsic models are actually a part of their parent module and cannot be used without their parent module.

00_Arch - 40 - Modularity of the SMUOS Framework — Feature

It is possible to extend the SMUOS Framework by implementing your own MIDAS Objects.

However, if those MIDAS Objects needed new functionality from the Simple Scene Controller or from the Module Coordinator, you would be dependent on the SMUOS project.

For this case, it is possible to support new types/classes of MIDAS Objects by extending the Simple Scene Controller and/or the Module Coordinator. This extensibility of the Simple Scene Controller and of the Module Coordinator is called "Modularity of the SMUOS Framework".

00_Arch - 45 - Dynamic Models — Feature

THE FEATURE "DYNAMIC MODELS" IS NOT AVAILABLE YET.

It was planned for step 0033, to support dynamic models of rail vehicles with the Train Manager Extension.

A very drafty sketch of some ideas is collected in the concept paper concepts/052_DynamicModels.txt.

00_Arch - 50 - Handover — Feature

THE FEATURE "HANDOVER" IS NOT AVAILABLE YET.

It was planned for "some step beyond step 0033", to support handover for rail vehicles. That means, some kind of "handover track" should be defined to connect tracks of one module with tracks of another module.

Functionality Overview (SRR)

00_Arch - 55 - Moving Modules — Feature

THE FEATURE "MOVING MODULES" IS NOT AVAILABLE YET.

It was planned for "some step beyond step 0033", to support train movers, i.e. to support moving tracks and turnouts (that could be contained in arbitrary models that could be contained in arbitrary modules in turn, i.e. they could be contained even in dynamic models changing their module). This should be realized by the so-called MIDAS Object "Module Container".

The concept of the handover tracks should be generalized, to support
- turntables
- trains on a ferry ship
- rail vehicles transported by other rail vehicles

01_Conv - 00 - Convenience Features — Feature

Convenience Features do not define specific functionality. They are general properties of the product, which make it easier - more convenient - to use the product.

01_Conv - 05 - X3D Player Support — Feature

This feature documents, which Web3D Browsers are supported by the SRR/SMUOS Framework. Currently, following Web3D Browsers + MU Systems are supported.
- BS Contact (singleuser mode)
- BS Contact + BS Collaborate (multiuser mode)

01_Conv - 06 - MU System Support — Feature

This feature documents, which MU Systems are supported by the SRR/SMUOS Framework. Currently, following Web3D Browsers + MU Systems are supported.
- BS Contact (singleuser mode)
- BS Contact + BS Collaborate (multiuser mode)

01_Conv - 10 - Authoring Support — Feature

THE FEATURE "AUTHORING SUPPORT" IS NOT AVAILABLE YET.

It was planned for "some step beyond step 0033", to implement Python scripts for the Blender editor, to support (more) easy modeling of SrrTrains layouts.

01_Conv - 15 - Docu: Project WEB — Feature

The sourceforge project "simulrr" provides a project WEB.

Functionality Overview (SRR)

01_Conv - 25 - Docu: Concepts' Descriptions Feature

The sourceforge project "simulrr" provides the "source"code (in .odt format) and the created .txt files of the descriptions of all concepts.
The Concept's Descriptions intend to support developers and users (model authors, module authors, frame authors) of the SRR/SMUOS Framework.
However, they cannot be compared to a well-defined set of user manuals, which is still missing.

01_Conv - 30 - Docu: Testcase Descriptions Feature

Some testcases are officially documented, to support developers getting familiar with the SRR/SMUOS Framework.

01_Conv - 32 - Docu: Product Database Feature

The product database is a relational data base that holds a matrix of "objects" and "reasons for change".
The intersection of a row of the matrix ("reason") with a column ("object") is a "change".
Objects are grouped in "classes" and "subclasses".
Reasons are grouped in "target releases".

01_Conv - 35 - Monolithic Layout (.zip) Feature

A monolithic layout is a layout, where each file can be reached by a relative URL.
SrrTrains defines to have a "two-level" directory structure.
The SRR/SMUOS Framework has been tested in a "local monolithic layout".

01_Conv - 40 - Monolithic Layout (Webspace) Feature

A monolithic layout is a layout, where each file can be reached by a relative URL.
SrrTrains defines to have a "two-level" directory structure.
The SRR/SMUOS Framework has been tested in a "monolithic layout on a WebSpace".

01_Conv - 45 - Distributed Layout Feature

THIS FEATURE HAS NOT BEEN TESTED.
A distributed layout is a layout, where each file can be reached by an absolute URL.
Each file can be downloaded from a different host.
The SRR/SMUOS Framework has NOT been tested in a "distributed layout".

10_SRR - 00 - Features of the SMUOS Framework Feature

The features of the feature group "SRR - Features of the SMUOS Framework" are provided by following components:
- SMUOS Framework
- Example Basic MIDAS Objects

Functionality Overview (SRR)

10_SRR - 03 - SSC Parameters of the UOC "Base" Feature

The SSC Parameters of the UOC "Base",
- maxRTT (Base-#parm-maxRTT)
- randomFactor (Base-#parm-randomFactor)

allow to perform experiments with the network parameters of the SRR/SMUOS Framework.

10_SRR - 05 - Enter Moving Model Feature

The "bouncing avatars problem" is solved by the help of so-called avatar containers (a special kind of MIDAS Objects).

When a user binds an animated viewpoint, the positions and orientations of his pilot avatar should be transmitted in values relative to the animated coordinate system.

10_SRR - 10 - Join Avatar Feature

"Beam to a user" means selecting the user from a list of nicknames and being moved to the position of that user, into a face-to-face position.

It's up to the frame to do this, because the frame has access to the <BSCollaborate> node and it's "users" field.

However, this action has to be supported by the SMUOS Framework, because avatars can be contained in avatar containers and position as well as orientation of avatars will be transmitted in relative coordinates.

This function is only supported with BS Contact and BS Collaborate, currently.

10_SRR - 15 - Binary Switch Feature

The "Binary Switch" MIDAS Object supports module authors and model authors in situations, where an SFBool state has to be maintained (e.g. to open/close doors, to switch lights on and off and so on). The state is maintained globally (it is shared among all scene instances). A local animation can be output (SFFloat between "0.0" and "1.0", where "0.0" fits to "false" and "1.0" fits to "true").

10_SRR - 20 - Carousel Drive Feature

The "Carousel Drive" MIDAS Object supports module authors and model authors in situations, where a cyclic movement can be switched on and off smoothly.
The state (SFFloat "0" to "2.pi") is maintained globally (it is shared among all scene instances).
A "binary switch" MIDAS Object is contained in the "carousel drive" MIDAS object to switch the rotation of the carousel on and off.

Functionality Overview (SRR)

10_SRR - 25 - Trigger **Feature**

The "Trigger" MIDAS Object supports module authors and model authors in situations, where a boolean event (trigger)
is to be distributed to all scene instances, when a local event happens in one scene instance.

20_BMM - 00 - Beamer Manager Extension **Feature**

The features of the feature group "BMM - Beamer Manager Extension" are provided by the component
- Beamer Manager Extension

20_BMM - 05 - Define Meeting Point **Feature**

The "Beamer Manager Extension" of the SMUOS Framework maintains a list of so-called "beamer destinations".

A viewpoint can be made a beamer destination, by creating a "Beamer Destination" MIDAS Object and referencing the viewpoint therein.

20_BMM - 10 - Beam to Meeting Point **Feature**

A "Beamer" MIDAS Object can be used to output a list of all beamer destinations and to select one of them to be bound.

Selecting beamer destinations can be additionally done via the user interface of the Simple Scene Controller.

30_KMM - 00 - Key Manager Extension **Feature**

The features of the feature group "KMM - Key Manager Extension" are provided by the component
- Key Manager Extension

30_KMM - 03 - SSC Parameters of the UOC "Keys" **Feature**

The SSC Parameters of the UOC "Keys",
- carriedKeys (Keys-#parm-carriedKeys)
- putKey (Keys-#parm-putKey)
- boundKeyContainer (Keys-#parm-boundKeyContainer)
- resetKeys (Keys-#parm-resetKeys)

allow to perform operations on keys, especially on carried keys.

Functionality Overview (SRR)

30_KMM - 05 - Create/Take/Put/Reset Keys — Feature

Keys can be created within key containers and they can be taken by an avatar or put back to a key container.

It's possible to reset all key containers and carried keys globally.

30_KMM - 10 - Carried Keys Lock — Feature

Keys can unlock a "carried keys lock", when they are carried by an avatar.

30_KMM - 15 - Contained Key Lock — Feature

A key can be contained in a "contained key lock" and can be taken/put back. The lock can be unlocked by the contained key.

40_TMM - 00 - Train Manager Extension — Feature

The features of the feature group "TMM - Train Manager Extension" are provided by the component
- Train Manager Extension

40_TMM - 03 - Tracks and Turnouts — Feature

The author of the models of tracks and turnouts can use the SRR Objects "Track Node", "Track Edge", "Basic Track Section", "Basic 2-Way Turnout" and an "N-Way Switch" to model a mesh of nodes and edges.
The SRR Objects for rail vehicles will use this mesh to move the vehicles "along the tracks".

40_TMM - 06 - Rail Vehicles — Feature

THE FEATURE "SRR OBJECTS FOR RAIL VEHICLES" IS NOT AVAILABLE YET.

40_TMM - 09 - Create Vehicle — Feature

A "Setup Point" SRR Object can be used to define a location and an initial state for the creation of "1-Vehicle-Trains".

The "Setup Point" outputs a (filtered) list of registered vehicle types and can be used to select one vehicle type and to create a vehicle of this type.

THE FEATURE "CREATE VEHICLE" IS NOT AVAILABLE YET, HOWEVER, THE "SETUP POINT" SRR OBJECT ALREADY EXISTS.

Functionality Overview (SRR)

40_TMM - 12 - Move Train **Feature**

THE FEATURE "MOVE TRAIN" IS NOT AVAILABLE YET.

40_TMM - 15 - Switch the Points Manually **Feature**

The switch, which is contained in an "Track Node" object of a turnout, can be the "standard N-Way Switch" SrrSwitchB, which can be used to switch the points manually.

40_TMM - 18 - Vehicle's Basic User Interface **Feature**

THE FEATURE "VEHICLES BASIC USER INTERFACE" IS NOT AVAILABLE YET.

40_TMM - 21 - Delete Train **Feature**

THE FEATURE "DELETE TRAIN" IS NOT AVAILABLE YET.

40_TMM - 24 - Vehicle's User Interface **Feature**

THE FEATURE "VEHICLES USER INTERFACE" IS NOT AVAILABLE YET.

40_TMM - 30 - Gauge Check **Feature**

THE FEATURE "GAUGE CHECK" IS NOT AVAILABLE YET.

40_TMM - 35 - Handling of Derailment **Feature**

THE FEATURE "HANDLING OF DERAILMENT" IS NOT AVAILABLE YET.

40_TMM - 40 - Train Changes Module **Feature**

THE FEATURE "TRAIN CHANGES MODULE" IS NOT AVAILABLE YET.

40_TMM - 45 - Bumpers **Feature**

THE FEATURE "BUMPERS" IS NOT AVAILABLE YET.

40_TMM - 50 - Coupling and Collisions **Feature**

THE FEATURE "COUPLING AND COLLISIONS" IS NOT AVAILABLE YET.

Functionality Overview (SRR)

40_TMM - 55 - Decoupling Track **Feature**

THE FEATURE "DECOUPLING TRACK" IS NOT AVAILABLE YET.

40_TMM - 60 - Train Movers **Feature**

THE FEATURE "TRAIN MOVERS" IS NOT AVAILABLE YET.

40_TMM - 65 - Bursting Open the Points **Feature**

THE FEATURE "BURSTING OPEN THE POINTS" IS NOT AVAILABLE YET.

40_TMM - 70 - Derail in Curves (Speeding) **Feature**

THE FEATURE "DERAIL IN CURVES (SPEEDING)" IS NOT AVAILABLE YET.

40_TMM - 75 - Derail on Points **Feature**

THE FEATURE "DERAIL ON POINTS" IS NOT AVAILABLE YET.

40_TMM - 80 - Lock the Points **Feature**

THE FEATURE "LOCK THE POINTS" IS NOT AVAILABLE YET.

40_TMM - 85 - Interlocking (1900's) **Feature**

THE FEATURE "INTERLOCKING (1900's)" IS NOT AVAILABLE YET.