Hauptwerk ODF objects relationship chart

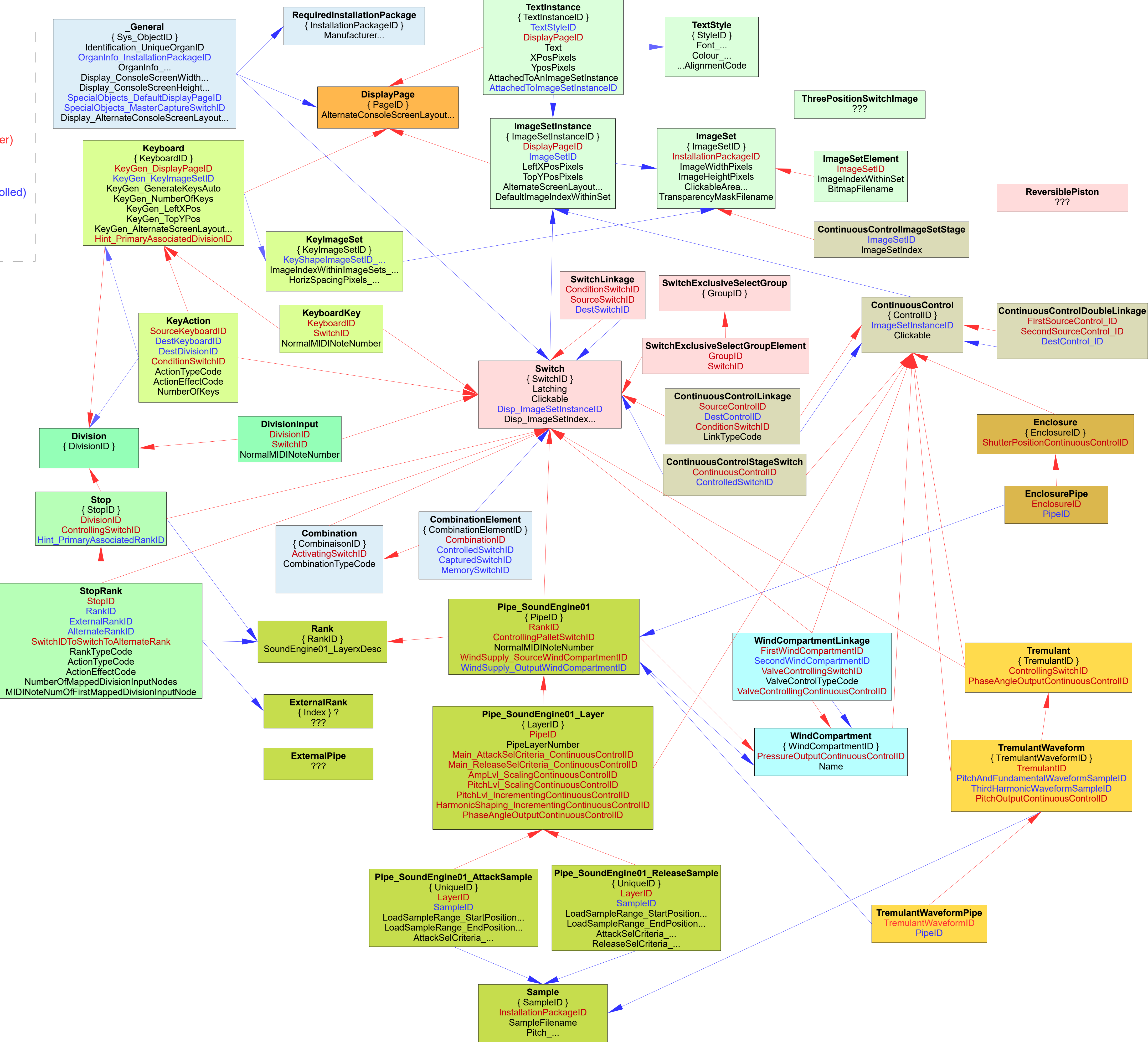**Legend :**

Object Type

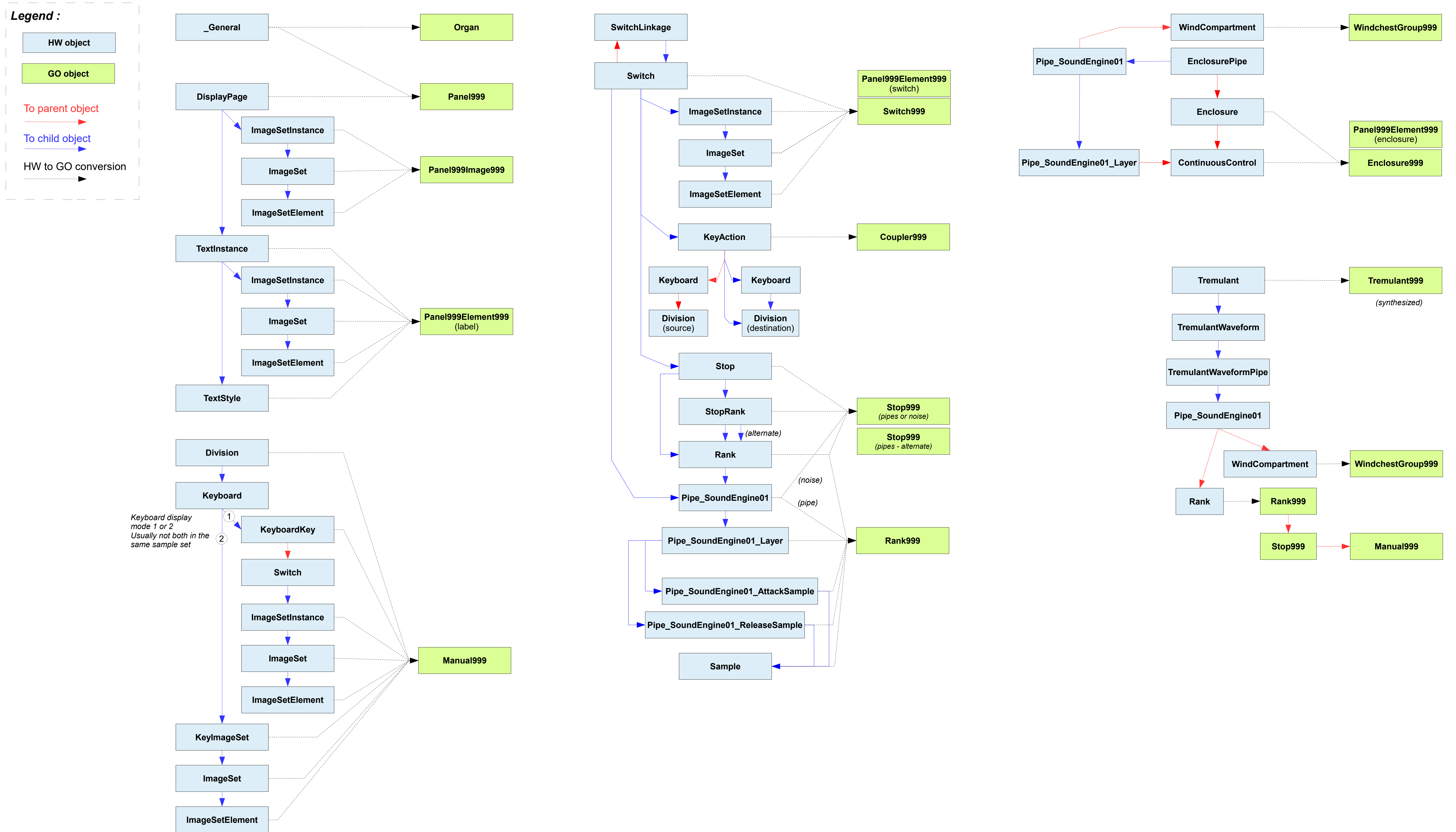{ object ID }

Parent object ID
(owner or controller)

Child object ID
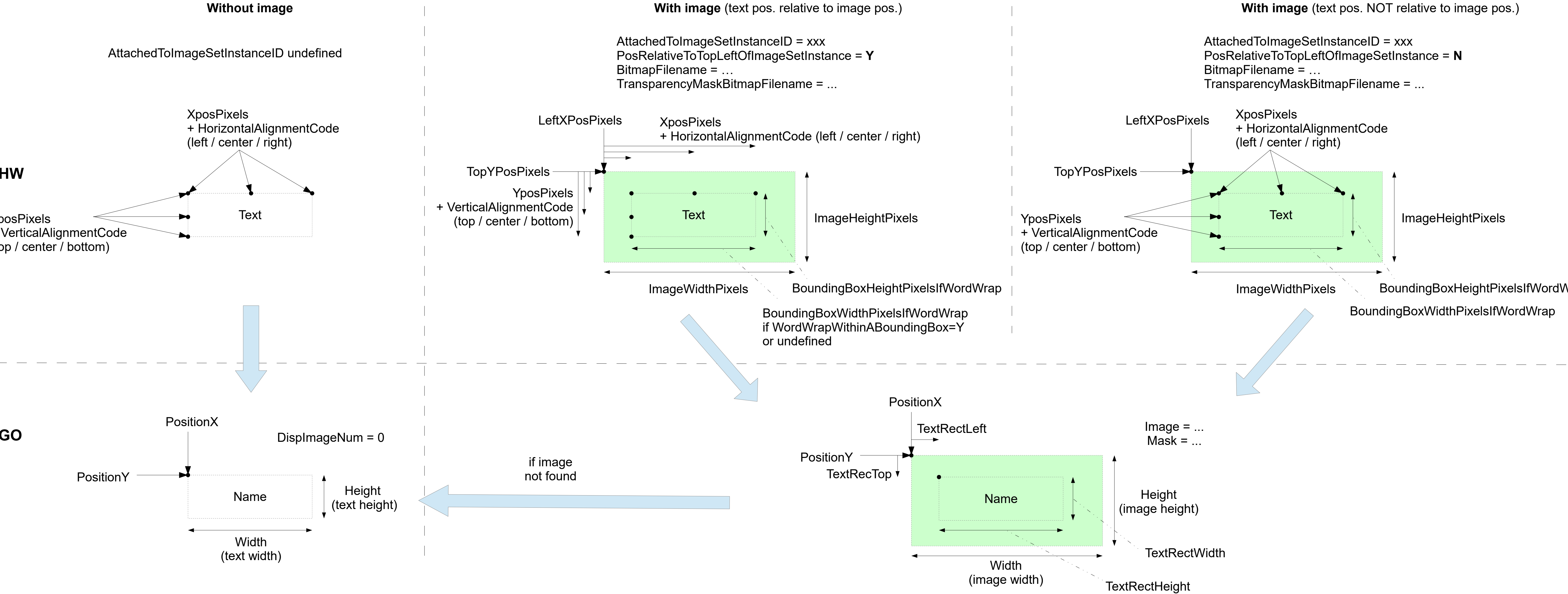(member or controlled)

Other interresting
attributes

_General
{ Sys_ObjectID }
Identification_UniqueOrganID
OrganInfo_InstallationPackageID
OrganInfo_....
Display_ConsoleScreenWidth...
Display_ConsoleScreenHeight...
SpecialObjects_DefaultDisplayPageID
SpecialObjects_MasterCaptureSwitchID
Display_AlternateConsoleScreenLayout...

RequiredInstallationPackage
{ InstallationPackageID }
Manufacturer...

TextInstance
{ TextInstanceID }
TextStyleID
DisplayPageID
Text
XPosPixels
YposPixels
AttachedToAnImageSetInstance
AttachedToImageSetInstanceID

TextStyle
{ StyleID }
Font_...
Colour_...
...AlignmentCode

ThreePositionSwitchImage
???

DisplayPage
{ PageID }
AlternateConsoleScreenLayout...

ImageSetInstance
{ ImageSetInstanceID }
DisplayPageID
ImageSetID
LeftXPosPixels
TopYPosPixels
AlternateScreenLayout...
DefaultImageIndexWithinSet

ImageSet
{ ImageSetID }
InstallationPackageID
ImageWidthPixels
ImageHeightPixels
ClickableArea...
TransparencyMaskFilename

ImageSetElement
{ ImageSetID }
ImageIndexWithinSet
BitmapFilename

ReversiblePiston
???

Keyboard
{ KeyboardID }
KeyGen_DisplayPageID
KeyGen_KeyImageSetID
KeyGen_GenerateKeysAuto
KeyGen_NumberOfKeys
KeyGen_LeftXPos
KeyGen_TopYPos
KeyGen_AlternateScreenLayout...
Hint_PrimaryAssociatedDivisionID

ContinuousControlImageSetStage
ImageSetID
ImageSetIndex

KeyImageSet
{ KeyImageSetID }
KeyShapeImageSetID_...
ImageIndexWithinImageSets_...
HorizSpacingPixels_...

KeyboardKey
KeyboardID
SwitchID
NormalMIDINoteNumber

SwitchLinkage
ConditionSwitchID
SourceSwitchID
DestSwitchID

SwitchExclusiveSelectGroup
{ GroupID }

ContinuousControl
{ ControlID }
ImageSetInstanceID
Clickable

ContinuousControlDoubleLinkage
FirstSourceControl_ID
SecondSourceControl_ID
DestControl_ID

KeyAction
SourceKeyboardID
DestKeyboardID
DestDivisionID
ConditionSwitchID
ActionTypeCode
ActionEffectCode
NumberOfKeys

SwitchExclusiveSelectGroupElement
GroupID
SwitchID

ContinuousControlLinkage
SourceControlID
DestControlID
ConditionSwitchID
LinkTypeCode

Switch
{ SwitchID }
Latching
Clickable
Disp_ImageSetInstanceID
Disp_ImageSetIndex...

Enclosure
{ EnclosureID }
ShutterPositionContinuousControlID

Division
{ DivisionID }

DivisionInput
DivisionID
SwitchID
NormalMIDINoteNumber

ContinuousControlStageSwitch
ContinuousControlID
ControlledSwitchID

EnclosurePipe
EnclosureID
PipeID

Stop
{ StopID }
DivisionID
ControllingSwitchID
Hint_PrimaryAssociatedRankID

Combination
{ CombinaisonID }
ActivatingSwitchID
CombinationTypeCode

CombinationElement
{ CombinationElementID }
CombinationID
ControlledSwitchID
CapturedSwitchID
MemorySwitchID

StopRank
StopID
RankID
ExternalRankID
AlternateRankID
SwitchIDToSwitchToAlternateRank
RankTypeCode
ActionTypeCode
ActionEffectCode
NumberOfMappedDivisionInputNodes
MIDINoteNumOfFirstMappedDivisionInputNode

Pipe_SoundEngine01
{ PipeID }
RankID
ControllingPalletSwitchID
NormalMIDINoteNumber
WindSupply_SourceWindCompartmentID
WindSupply_OutputWindCompartmentID

WindCompartmentLinkage
FirstWindCompartmentID
SecondWindCompartmentID
ValveControllingSwitchID
ValveControlTypeCode
ValveControllingContinuousControlID

Tremulant
{ TremulantID }
ControllingSwitchID
PhaseAngleOutputContinuousControlID

Rank
{ RankID }
SoundEngine01_LayerxDesc

ExternalRank
{ Index } ?
???

ExternalPipe
???

Pipe_SoundEngine01_Layer
{ LayerID }
PipeID
PipeLayerNumber
Main_AttackSelCriteria_ContinuousControlID
Main_ReleaseSelCriteria_ContinuousControlID
AmpLvl_ScalingContinuousControlID
PitchLvl_ScalingContinuousControlID
PitchLvl_IncrementingContinuousControlID
HarmonicShaping_IncrementingContinuousControlID
PhaseAngleOutputContinuousControlID

WindCompartment
{ WindCompartmentID }
PressureOutputContinuousControlID
Name

TremulantWaveform
{ TremulantWaveformID }
TremulantID
PitchAndFundamentalWaveformSampleID
ThirdHarmonicWaveformSampleID
PitchOutputContinuousControlID

Pipe_SoundEngine01_AttackSample
{ UniqueID }
LayerID
SampleID
LoadSampleRange_StartPosition...
LoadSampleRange_EndPosition...
AttackSelCriteria_...

Pipe_SoundEngine01_ReleaseSample
{ UniqueID }
LayerID
SampleID
LoadSampleRange_StartPosition...
LoadSampleRange_EndPosition...
AttackSelCriteria_...
ReleaseSelCriteria_...

TremulantWaveformPipe
TremulantWaveformID
PipeID

Sample
{ SampleID }
InstallationPackageID
SampleFilename
Pitch_...

Hauptwerk to GrandOrgue ODF objects relationship chart

Legend :
- HW object
- GO object
- To parent object
- To child object
- HW to GO conversion

_General → Organ

DisplayPage → Panel999

ImageSetInstance → ImageSet → ImageSetElement → Panel999Image999

TextInstance → ImageSetInstance → ImageSet → ImageSetElement → Panel999Element999 (label)

TextStyle

Division → Keyboard → KeyboardKey

Keyboard display mode 1 or 2
Usually not both in the same sample set

① ②

KeyboardKey → Switch → ImageSetInstance → ImageSet → ImageSetElement → Manual999

KeyImageSet → ImageSet → ImageSetElement

SwitchLinkage

Switch → ImageSetInstance → ImageSet → ImageSetElement → Panel999Element999 (switch) / Switch999

KeyAction → Coupler999

Keyboard — Keyboard
Division (source) — Division (destination)

Stop → StopRank → Rank → Pipe_SoundEngine01

Stop999 (pipes or noise)
Stop999 (pipes - alternate)
(alternate)

(noise)
(pipe)

Pipe_SoundEngine01 → Pipe_SoundEngine01_Layer → Pipe_SoundEngine01_AttackSample → Pipe_SoundEngine01_ReleaseSample → Sample

Rank999

WindCompartment → WindchestGroup999

Pipe_SoundEngine01 ← EnclosurePipe

Enclosure

Pipe_SoundEngine01_Layer → ContinuousControl → Enclosure999

Panel999Element999 (enclosure)

Tremulant → Tremulant999
(synthesized)

TremulantWaveform → TremulantWaveformPipe → Pipe_SoundEngine01 → WindCompartment → WindchestGroup999

Rank → Rank999 → Stop999 → Manual999

**Label conversion
from HW to GO
for positions/sizes and text attributes**

Without image

With image (text pos. relative to image pos.)

With image (text pos. NOT relative to image pos.)

AttachedToImageSetInstanceID undefined

AttachedToImageSetInstanceID = xxx
PosRelativeToTopLeftOfImageSetInstance = **Y**
BitmapFilename = …
TransparencyMaskBitmapFilename = ...

AttachedToImageSetInstanceID = xxx
PosRelativeToTopLeftOfImageSetInstance = **N**
BitmapFilename = …
TransparencyMaskBitmapFilename = ...

HW

XposPixels
+ HorizontalAlignmentCode
(left / center / right)

YposPixels
+ VerticalAlignmentCode
(top / center / bottom)

Text

LeftXPosPixels

XposPixels
+ HorizontalAlignmentCode (left / center / right)

TopYPosPixels

YposPixels
+ VerticalAlignmentCode
(top / center / bottom)

Text

ImageHeightPixels

ImageWidthPixels

BoundingBoxHeightPixelsIfWordWrap

BoundingBoxWidthPixelsIfWordWrap
if WordWrapWithinABoundingBox=Y
or undefined

LeftXPosPixels

XposPixels
+ HorizontalAlignmentCode
(left / center / right)

TopYPosPixels

YposPixels
+ VerticalAlignmentCode
(top / center / bottom)

Text

ImageHeightPixels

ImageWidthPixels

BoundingBoxHeightPixelsIfWordWrap

BoundingBoxWidthPixelsIfWordWrap

GO

PositionX

DispImageNum = 0

PositionY

Name

Height
(text height)

Width
(text width)

if image
not found

PositionX

TextRectLeft

PositionY

TextRecTop

Name

Image = ...
Mask = ...

Height
(image height)

TextRectWidth

Width
(image width)

TextRectHeight

**If the PositionX / PositionY of a GO label is within the display rectangle of a GO PanelElement (but Manual and Label),
the GO label is not created and its Name attribute is copied in the DispLabelText of the PanelElement and TextRectLeft / TextRectTop
are set to place the text in the GO PanelElement**

**Stop/Rank conversion
from HW to GO
for compass related attributes**

NormalMIDINoteNumber (first KeyboardKey object)   NormalMIDINoteNumber (last KeyboardKey object)

InpGen_MIDINoteNumberOfFirstInput (Keyboard)
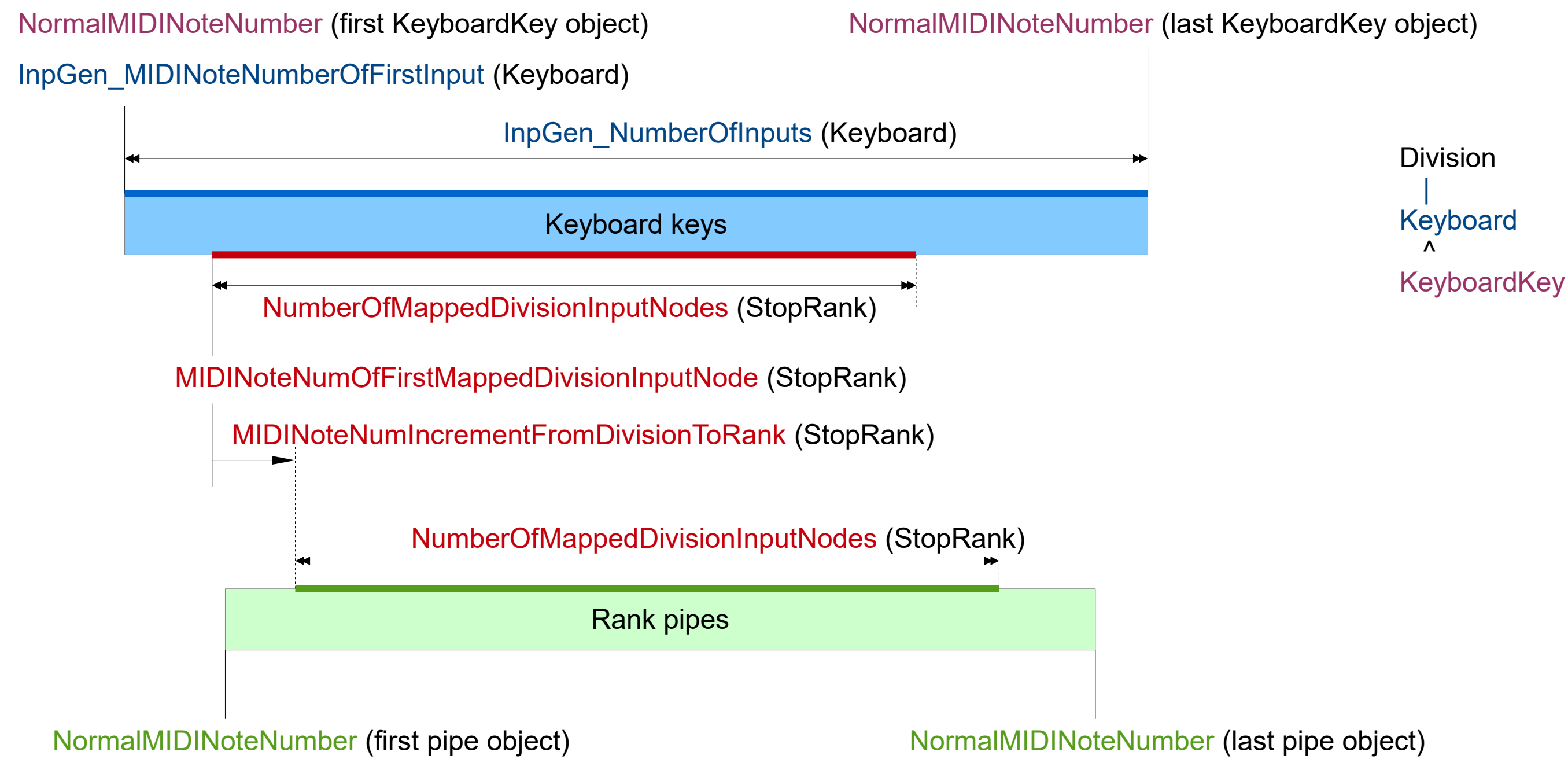
| means link one to one
^ means link one to several (from up to dow)

InpGen_NumberOfInputs (Keyboard)

Keyboard keys

NumberOfMappedDivisionInputNodes (StopRank)

MIDINoteNumOfFirstMappedDivisionInputNode (StopRank)

MIDINoteNumIncrementFromDivisionToRank (StopRank)

NumberOfMappedDivisionInputNodes (StopRank)

Rank pipes

NormalMIDINoteNumber (first pipe object)   NormalMIDINoteNumber (last pipe object)

Division   Division
| ^
Keyboard   Stop
| ^
KeyboardKey   StopRank
                  |
                  Rank
                  ^
                  Pipe
                  ^
                  Pipe_Layer
                  ^
                  Pipe_Attack/Release
                  |
                  Sample

If HW MIDINoteNumIncrementFromDivisionToRank not defined
   = 0

If HW MIDINoteNumOfFirstMappedDivisionInputNode not defined
   = HW NormalMIDINoteNumber (first)
HW MIDINoteNumOfFirstMappedDivisionInputNode =
   max (HW MIDINoteNumOfFirstMappedDivisionInputNode,
          HW NormalMIDINoteNumber (first) - HW MIDINoteNumIncrementFromDivisionToRank)

If HW NumberOfMappedDivisionInputNodes not defined
   = HW NormalMIDINoteNumber (last − first + 1)
HW NumberOfMappedDivisionInputNodes =
   min(HW NumberOfMappedDivisionInputNodes,
        HW NormalMIDINoteNumber (last)
        - (HW MIDINoteNumOfFirstMappedDivisionInputNode
           + HW MIDINoteNumIncrementFromDivisionToRank) + 1

HW

- -

GO

(if NumberOfRanks = 0)

NumberOfLogicalKeys

FirstAccessibleKeyMIDINoteNumber

FirstAccessibleKeyLogicalKeyNumber

NumberOfAccessibleKeys

Manual keys

FirstAccessiblePipeLogicalKeyNumber

NumberOfAccessiblePipes

FirstAccessiblePipeLogicalPipeNumber

Stop pipes

NumberOfLogicalPipes
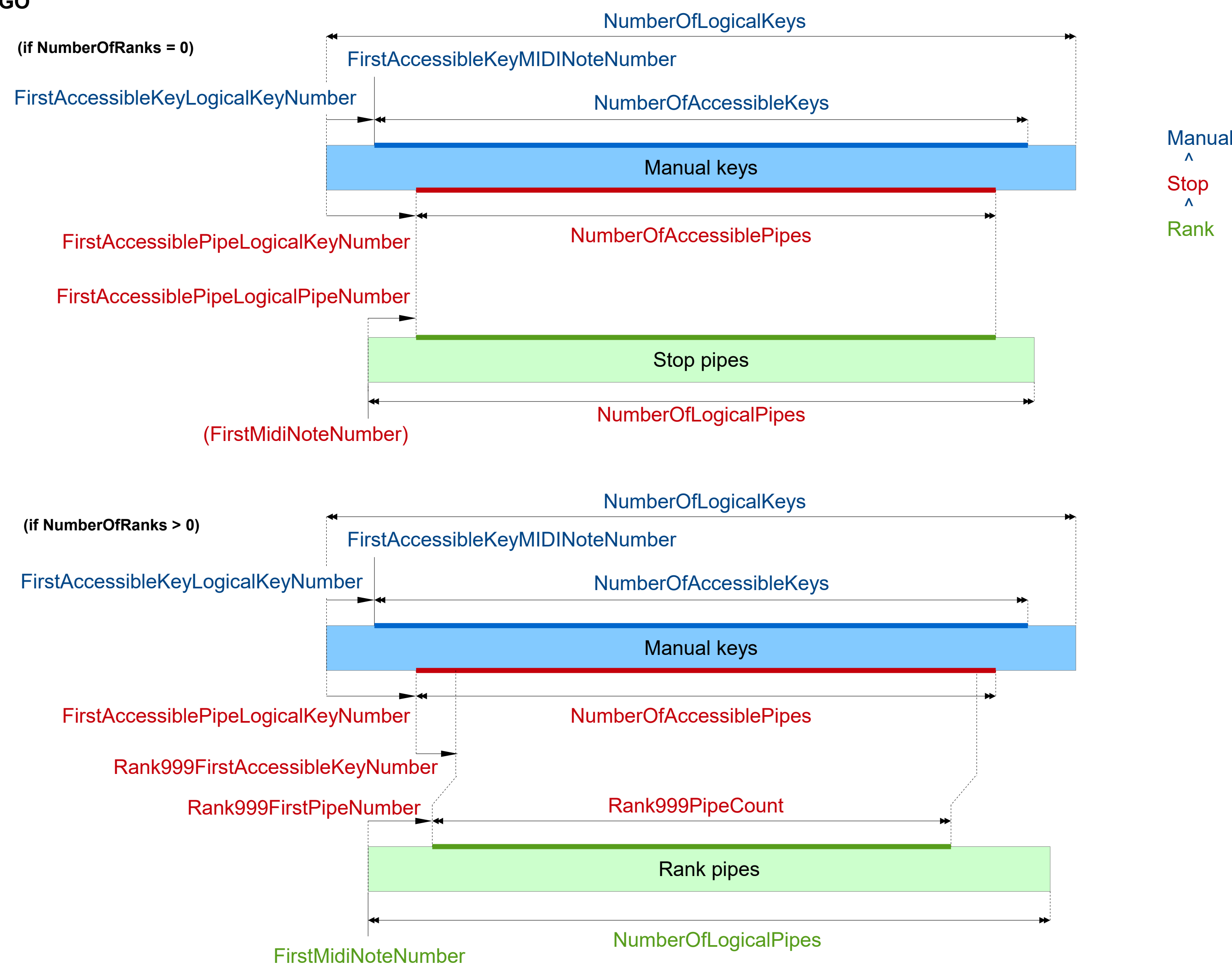
(FirstMidiNoteNumber)

Manual   GO Rank999FirstPipeNumber =
^   HW MIDINoteNumOfFirstMappedDivisionInputNode
Stop   + HW MIDINoteNumIncrementFromDivisionToRank
^   - HW NormalMIDINoteNumber (first) + 1
Rank
                GO Rank999FirstAccessibleKeyNumber (absolute value) =
                    HW MIDINoteNumOfFirstMappedDivisionInputNode
                    - GO FirstAccessibleKeyMIDINoteNumber + 1

                GO Rank999PipeCount = HW NumberOfMappedDivisionInputNodes

                GO FirstAccessiblePipeLogicalKeyNumber =
                    min(GO Rank999FirstAccessibleKeyNumber (absolute value)) of all Rank999s

                GO NumberOfAccessiblePipes =
                    max(GO Rank999FirstAccessibleKeyNumber (absolute value)
                    + GO Rank999PipeCount) of all Rank999s
                    - GO FirstAccessiblePipeLogicalKeyNumber + 1

                GO Rank999FirstAccessibleKeyNumber (offset value) =
                    GO Rank999FirstAccessibleKeyNumber (absolute value)
                    - GO FirstAccessiblePipeLogicalKeyNumber

                GO FirstMidiNoteNumber = HW NormalMIDINoteNumber (min)

                GO NumberOfLogicalPipes = HW NormalMIDINoteNumber (max − min + 1)

(if NumberOfRanks > 0)

NumberOfLogicalKeys

FirstAccessibleKeyMIDINoteNumber

FirstAccessibleKeyLogicalKeyNumber

NumberOfAccessibleKeys

Manual keys

FirstAccessiblePipeLogicalKeyNumber

NumberOfAccessiblePipes

Rank999FirstAccessibleKeyNumber

Rank999FirstPipeNumber

Rank999PipeCount

Rank pipes

FirstMidiNoteNumber

NumberOfLogicalPipes