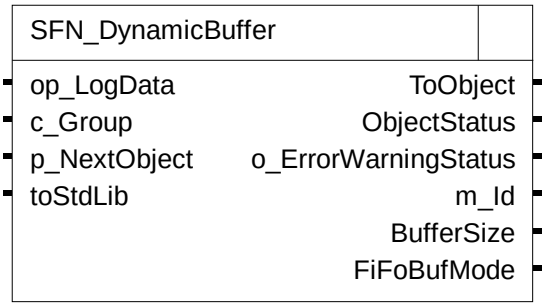
Name: SFN_DynamicBuffer

Revision: 0.3

Ladder: false
Complex: true

Graphic Schema:



Comment: Dynamic Memory access
Allocate and free memory in runtime.
BufferSize can be configured runtime. The size is not limited by OS. (standard Lasal Objects normally can not exceed 64K)
It is recommended to Allocate buffers during initialsation only!
if buffermode ONCE is used it is possible to link segment buffers together to get a segmentedbuffer.
Usage of dynamic memory:
- Memory can be accessed as FiFo buffer
- Memory can be accessed via index
- Memory can be accessed directly the bufferpointer.
The first two access methodes will check the boundary limits
For the pointer methode the object which allocates memeory is responsible for checking the boundaries.
It is recommended not to mix up access methodes.

Clients:

Name: op_LogData
Class: SFN_Base
DataType: gpt_LogData
Type: Data Channel
Required: false
Comment: Output for logging data to SF_Logger

Name: c_Group
Class: SFN_Base
DataType: UDINT
Type: Data Channel
Required: false
Comment: Group identification object is part of.

Name: p_NextObject
Class: SFN_LinkedListBase
DataType: pVoid
Type: Data Channel
Required: false
Comment: Pointer to next object in linked list

Name: toStdLib
Class: _StdLib
DataType: DINT
Type: Object Channel
Required: false
Comment: Objectchannel to OS stdlib

Server:

Name: ToObject
GUID: {9EED831D-1495-49CA-AD11-0E8CDA8941D2}
Class: SFN_Base
Visualized: false
DataType: pVoid
Type: Object Channel

Comment:	ToObject: Object channel server. Channel to reach the methodes of this object. In case this object should be Accessible by a pointer the variable ToObject is used to handover the address of this object. This server is never used for anything else!!!

Name:	ObjectStatus
GUID:	{A29E2DB3-B7AD-4363-A726-DB93BF808383}
Visualized:	false
DataType:	gt_ObjectStatus
Type:	Data Channel
Initialize:	false
WriteProtected:	false
Retentive:	false
Comment:	Generic object status interface. Bit 0 - 15 is reserved for generic Safan framework Bit 16 -31 can be used by the application See also type gt_ObjectStatus.

Name:	o_ErrorWarningStatus
GUID:	{71D405E1-73D5-4283-95DF-BAB38DCB9D0B}
Visualized:	false
DataType:	UDINT
Type:	Data Channel
Initialize:	false
WriteProtected:	true
Retentive:	false
Comment:	Actual active Error or Warning status. A lower level message will not overwite an active higher level message. for example a warning will not overwrite this server if it has already an active error Note: see also internal variable FirstError to find the first error detected since last error handling.

Name:	m_Id
GUID:	{AAB7581E-3B92-42E8-9287-D9BCBCF7E8ED}
Visualized:	false
DataType:	UDINT
Type:	Data Channel
Initialize:	true
WriteProtected:	false
Retentive:	false
Comment:	An identification number of this object. Free to use/define by derived classes and application.

Name:	BufferSize
GUID:	{485BA9B8-B6BD-46BA-9ED4-FCB7843AA513}
Visualized:	false
DataType:	UDINT
Type:	Data Channel
Initialize:	true
WriteProtected:	false
Retentive:	false
Comment:	Buffersize reserved for buffer

Name:	FiFoBufMode
GUID:	{3A2E3365-2D01-4743-8D5F-73BED0F40E91}
Visualized:	false
DataType:	gt_FifoBufMode
Type:	Data Channel
Initialize:	true
WriteProtected:	false
Retentive:	false
Comment:	Fifo Buffer mode

Me
Virtual: true

Global access: true
AWL implementation: false
CDecl: false

Name: AllocateBuffer
Virtual: false
Global access: false
AWL implementation: false
CDecl: false

Name: FreeBuffer
Virtual: false
Global access: false
AWL implementation: false
CDecl: false

Name: InstallBuffer
Virtual: true
Global access: true
AWL implementation: false
CDecl: false
Input:: Name: NrOfBytes
Type: UDINT
Pointer: false
Register: <undefined>
Comment: Nr of bytes in Buffer.
Output:: Name: BufSize
Type: UDINT
Pointer: false
Register: <undefined>

Name: GetBufferPointer
Virtual: false
Global access: true
AWL implementation: false
CDecl: false
Comment: Get pointer to buffer.

!!WARNING!!
If object uses this pointer
user should check buffer
boundaries
!!WARNING!!

Output:: Name: p_BufPointer
Type: ^CHAR
Pointer: true
Register: <undefined>

Name: GetBufferSize
Virtual: false
Global access: true
AWL implementation: false
CDecl: false
Comment: Get the actual buffersize
Output:: Name: BufSize
Type: UDINT
Pointer: false
Register: <undefined>

Name: ReadFromBuffer
Virtual: false
Global access: true
AWL implementation: false
CDecl: false
Comment: Read from this buffer segment
Input:: Name: Idx
Type: UDINT
Pointer: false
Register: <undefined>

Register: <undefined>
Input:: Name: NrOfBytes
Type: UDINT
Pointer: false
Register: <undefined>
Output:: Name: NrOfRdBytes
Type: UDINT
Pointer: false
Register: <undefined>

Name: ReadFromBufferSegment
Virtual: false
Global access: true
AWL implementation: false
CDecl: false
Comment: Read from selected buffer segment
Input:: Name: Segment
Type: UDINT
Pointer: false
Register: <undefined>
Input:: Name: Idx
Type: UDINT
Pointer: false
Register: <undefined>
Input:: Name: p_RdValue
Type: pVoid
Pointer: false
Register: <undefined>
Input:: Name: NrOfBytes
Type: UDINT
Pointer: false
Register: <undefined>
Output:: Name: NrOfRdBytes
Type: UDINT
Pointer: false
Register: <undefined>

Name: ReadFromFifoBuffer
Virtual: false
Global access: true
AWL implementation: false
CDecl: false
Input:: Name: p_RdData
Type: ^CHAR
Pointer: true
Register: <undefined>
Comment:
Input:: Name: NrOfBytes
Type: UDINT
Pointer: false
Register: <undefined>
Output:: Name: RdCnt
Type: UDINT
Pointer: false
Register: <undefined>

Name: WriteToBuffer
Virtual: false
Global access: true
AWL implementation: false
CDecl: false
Comment: Write to this buffer segment
Input:: Name: Idx
Type: UDINT
Pointer: false
Register: <undefined>
Input:: Name: p_WrValue
Type: pVoid
Pointer: false
Register: <undefined>

Register: <undefined>
Output:: Name: NrOfWrBytes
Type: UDINT
Pointer: false
Register: <undefined>

Name: WriteToBufferSegment
Virtual: false
Global access: true
AWL implementation: false
CDecl: false
Comment: Write to selected buffer segment
Input:: Name: Segment
Type: UDINT
Pointer: false
Register: <undefined>
Input:: Name: Idx
Type: UDINT
Pointer: false
Register: <undefined>
Input:: Name: p_WrValue
Type: pVoid
Pointer: false
Register: <undefined>
Input:: Name: NrOfBytes
Type: UDINT
Pointer: false
Register: <undefined>
Output:: Name: NrOfWrBytes
Type: UDINT
Pointer: false
Register: <undefined>

Name: WriteToFifoBuffer
Virtual: false
Global access: true
AWL implementation: false
CDecl: false
Input:: Name: p_WrData
Type: ^CHAR
Pointer: true
Register: <undefined>
Input:: Name: NrOfBytes
Type: UDINT
Pointer: false
Register: <undefined>
Output:: Name: NrOfWrBytes
Type: UDINT
Pointer: false
Register: <undefined>

Name: ResetBuffer
Virtual: false
Global access: true
AWL implementation: false
CDecl: false
Comment: Clear buffer and restart all pointers

Variables: Name: p_StoreBuf
Type: ^CHAR
ElementType: CHAR
Pointer: true
Comment: Log buffer = first byte in buffer

Name: p_EndStoreBuf
Type: ^CHAR
ElementType: CHAR
Pointer: true
Comment: End of log buffer = last byte in buffer

Type: ^CHAR

Pointer: true
Comment: Actual byte in buffer tot Write to

Name: p_RdFiFoBuf
Type: ^CHAR
ElementType: CHAR
Pointer: true
Comment: Actual byte in buffer to read from

Name: FiFoByteCnt
Type: UDINT
ElementType: UDINT
Pointer: false
Comment: Nr of bytes stored in buffer

Name: FiFoByteCntInProgres
Type: UDINT
ElementType: UDINT
Pointer: false
Comment: Nr of Bytes in progress to administrate pointers.

Defines:
Dependencies:

Class: SFN_Base
Class: SFN_LinkedListBase
Class: SFN_StringUtils
Types: ChDsc
Types: ChDscEntry
Types: ChMeth
Types: ChMode
Types: ClsHdr
Types: ClsHdrConst
Types: CltCh
Types: ConfStates
Types: gpt_LogData
Types: gt_FifoBufMode
Types: gt_LogData
Types: gt_LogLevel
Types: gt_ObjectStatus
Types: Obj
Types: ObjDsc
Types: pChar
Types: pClsHdr
Types: pFct
Types: pVoid
Types: Revision
Types: SvrCh
Types: SvrDsc
Types: void
File: C:\DevEnv\Sigmatek\Projects\SafanStdLib\SafanStdLib\Class\SFN_Base\SafanGeneral.h
File: C:\DevEnv\Sigmatek\Projects\SafanStdLib\SafanStdLib\Class\SFN_Base\SFN_Base.pdf
File: C:\DevEnv\Sigmatek\Projects\SafanStdLib\SafanStdLib\Class\SFN_LinkedListBase\SFN_Linked
File: C:\DevEnv\Sigmatek\Projects\SafanStdLib\SafanStdLib\Class\SFN_DynamicBuffer\SFN_Dynam