

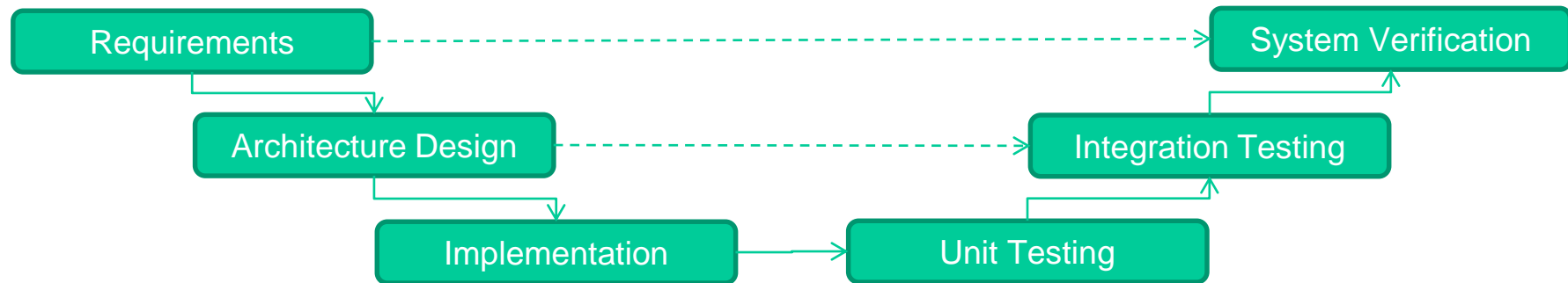


Safety-Critical Extension v1.1

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Introduction

- Objective:
 - *Facilitating* implementation of OpenVX into safety-critical applications
 - Does not guarantee implementation is safe.
- Software written for safety-critical applications requires rigorous demands on the deployment software and development processes (e.g., [ISO 26262](#))
- V-Model for safety-critical development processes



Requirements

- Annotated OpenVX spec with Functional Requirement tag numbers
 - Each requirement is identified with a [R#####] tag

vxCreateRemap()

```
vx_remap VX_API_CALL vxCreateRemap (  
    vx_context context,  
    vx_uint32 src_width,  
    vx_uint32 src_height,  
    vx_uint32 dst_width,  
    vx_uint32 dst_height )
```

Creates a remap table object [R01166].

Parameters

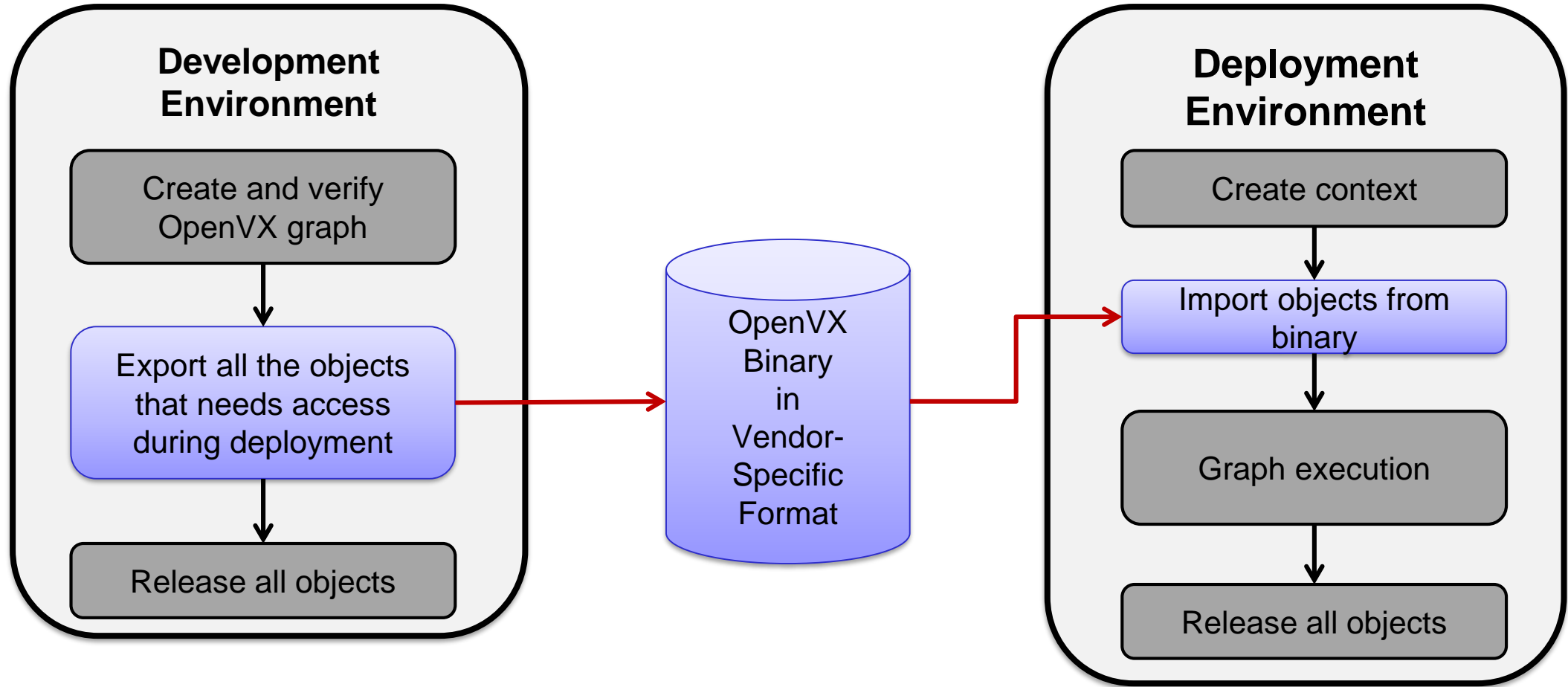
in	<i>context</i>	The reference to the overall context [R01167].
in	<i>src_width</i>	Width of the source image in pixel [R01168].
in	<i>src_height</i>	Height of the source image in pixels [R01169].
in	<i>dst_width</i>	Width of the destination image in pixels [R01170].
in	<i>dst_height</i>	Height of the destination image in pixels [R01171].

- Aids in traceability from requirements, to design, to implementation, to testing
- Each requirement must be tested

Implementation

- Updated OpenVX headers to be [MISRA-C](#) compliant
 - Change enums to #defines
 - Changes to vx_pixel_value_t
 - This is a union, with no variant tag—it is not portable across architectures, and requires a variant tag to specify the type of the contents
- Revision of some API's
 - Those that pass pointers to objects with no defined size

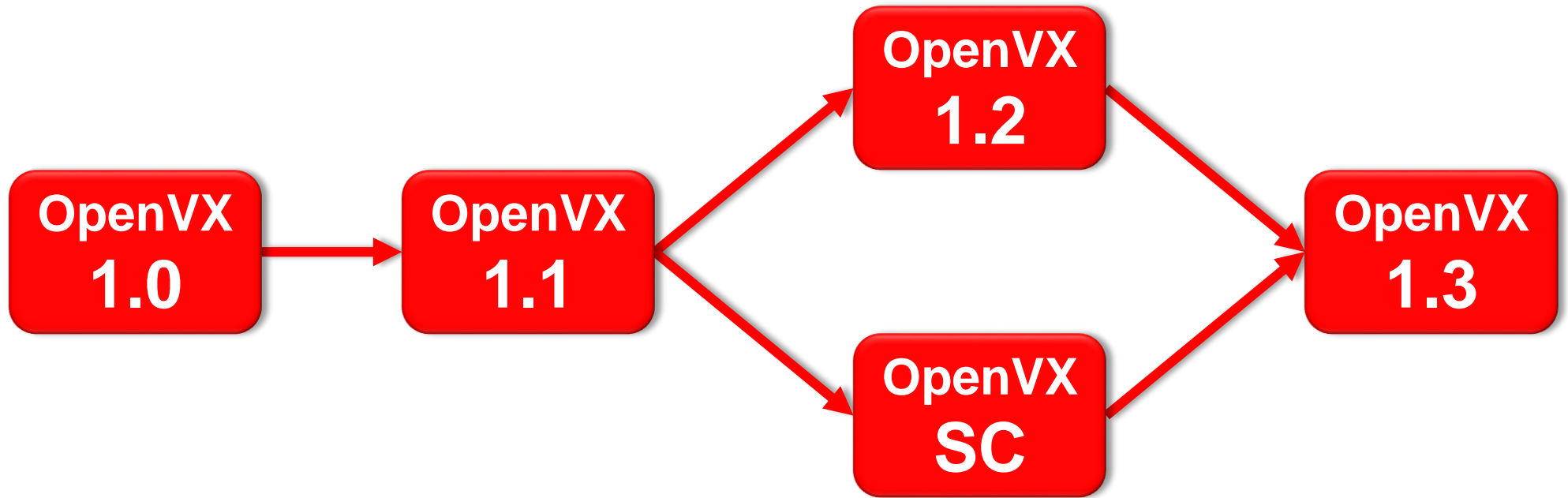
Development and Deployment Feature Sets



Development and Deployment Feature Sets

- **Needed for deployment:**
 - Import graphs
 - Provide input data objects
 - Process graphs
 - Access output data objects
- **Not needed for deployment (Development only):**
 - vxu immediate kernels
 - Graph construction
 - All node creation APIs for each of the vision kernels
 - Graph verification
 - System mapping and optimization decisions that typically occur during graph verification may be decided and fixed in the development feature set
 - Logging and performance features
 - Graph export functions

OpenVX Evolution



Summary

- Annotated OpenVX spec with Functional Requirement tag numbers
- Made header files MISRA-C compliant
- API definition revisions
- Defined Development vs Deployment Feature sets
- Added Import Export Extension as part of SC specification
- Plan to merge OpenVX SC into main OpenVX 1.3 spec
 - No longer maintain a separate spec