UR+ Technical Information – Updated for PolyScope X

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1. Scope

This document outlines the requirements and processes for developing, testing, and approving UR+ products to ensure seamless integration with Universal Robots. It includes hardware and software deliverables, technical scoping, development expectations, testing procedures, and user manual standards. With the introduction of PolyScope X, several elements have changed to support future-proof product development.

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2. Key Updates for PolyScope X

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1. **Focus on PolyScope X**
   New UR+ product development should prioritize compatibility with PolyScope X. Products developed solely for PolyScope 5 may face limited relevance moving forward.
2. **Feature Alignment**
   PolyScope X differs in functionality from PolyScope 5. Partners must align early with UR+ Development Consultant to define required features and integration methods, as traditional approaches may not apply.
3. **Compatibility**
   URCaps developed for PolyScope 5 are **not compatible** with PolyScope X. Developers must create new URCaps specifically for PolyScope X or explore alternative integration methods. UR Script is compatible between PolyScope 5 and PolyScope X.
4. **Product Integration**
   While URCaps were previously central to integration, PolyScope X offers new pathways for product integration. After aligning with a UR+ engineer a URCap may no longer a strict requirement for UR+ Program participation. However, seamless setup and programming must still be ensured through sample programs, URScript code, modules, and comprehensive documentation.
5. **Expanded Product Information Requirements** **←Hinting to Interfaces for Showroom**
   To improve compatibility visibility across robot models and software versions, partners must now provide detailed interface information:
   - **Hardware Interfaces**
     - Connection to Robot Base
     - Connection to Tool Flange
     - Product Weight
     - Electrical Interface
   - **Software Interfaces**
     - PolyScope 5 URCap (if applicable)

- PolyScope X URCap (if applicable)
- PolyScope X General Integration Guide

3. Technical resource

[comments]

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4. Technical Scoping

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The technical scoping call defines the project scope in detail. Developers should be prepared to discuss:

1. **Product type (Component, Software, Solution & Kit)**
2. Problem solved and differentiation
3. Product differentiation to existing ecosystem products
4. Physical interaction with the robot
5. Communication protocols and external software integration
6. URCap functionality (if applicable)

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~~3.~~5. Development Deliverables

Deliverable	UR+ Component	UR+ Application Kit
Hardware	This is the main deliverable and should be presented in the way an end user can expect to receive the product. This will include your product, any external parts, mounting hardware and tools, and electrical components and tools. The end user should not need any extra equipment to set up the product.	This is the main deliverable and should contain all the subcomponents listed in the scope of the application kit. Each subcomponent, and the overall kit should contain all necessary equipment and parts to set up the kit.
Software	If a URCap is required for product integration, this must be aligned with the UR+ team during the scoping phase. In such cases, the URCap should be made easily accessible to users—either via online	All URCaps used in the UR+ application kit must be provided. Any additional software needed must also be provided to the user. If the URCaps or external software is not available for easy download, it must be

Deliverable	UR+ Component	UR+ Application Kit
	download or provided on a USB stick and included in the Bill of Materials (BOM). Any external software necessary for product operation must also be provided in the same manner. If no URCap is provided, the product must still include all necessary resources to ensure a seamless integration and deployment experience. This includes sample programs, URScript code, configuration modules, ~~and comprehensive documentation that guides users through setup and usage.~~	provided through a USB stick and added to the BOM. Hardware required to interface from the external software to the robot must also be included.
Documentation	All UR+ Products must include a UR specific user manual that guides users through mechanical and electrical setup of the product on the robot, as well as information on the installation and navigation of the URCap and its functions. The manual should cover, but not limited as below: 1. Cobot TCP (Tool Center Point) configuration 2. Cobot mounting configuration 3. Cobot payload settings 4. Tool-IO configuration 5. Safety IO / Plan configuration (if applicable) 6. Others. The user manual must also include the BOM. The manual needs to cover product key specifications, as example items list but not limited as below: 1. Product weight 2. Product power (rated, peak, range) 3. Product cleanroom level 4. Product stoke (applies to external axis) 5. Maximum velocity (applies to external axis) 6. Maximum force (applies to gripper) 7. Dependencies (if applicable) Include any relevant internal testing documentation, third party approval reports, product specific manuals, and documentation of product design choices.	

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Commented [FH4]: Documentation requirement in common with App-kit & Component

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<table>
<tr><th>Deliverable</th><th>UR+ Component</th><th>UR+ Application Kit</th></tr>
<tr><td rowspan="2"></td><td colspan="2">The manual should have version table exposing detailed change log for easy of change tracking, it is recommended to follow a version definition approach of Major-SmallChange-Patch format.

In case the product is released in multi-region, partner should prepare local languages manual prior to the release.</td></tr>
<tr><td>~~All UR+ Products must include a UR specific user manual that guides users through mechanical and electrical setup of the product on the robot, as well as information on the installation and navigation of the URCap and its functions. The user manual must also include the BOM. Include any relevant internal testing documentation, third party approval reports, product specific manuals, and documentation of product design choices.~~</td><td>~~If UR+ Kits must include a UR specific user manual to guide users through installation and navigating through URCap functions.~~
There can be individual manuals for each subcomponent of the UR+ Application Kit ~~, but~~

~~there~~There must be one master document for quick installation and goes through system installation.

~~The user manual must also include the BOM. Include any relevant internal testing documentation, third party approval reports, product specific manuals, and documentation of product design choices.~~</td></tr>
<tr><td>Release materials</td><td colspan="2">UR+ product launching requires partner to get below items being ready and easy to access for end user.

1. Landing product page being hosted on Parnter’s website, it needs to be exclusive to showcase product introduction, pictures, URCap(optional), manual(optional). Containing 3rd brand robot with the product on landing page will not be acceptable.
2. 2-4 high resolution product page to enrich UR MarketPlace page gallery.
3. 2-3 pictures of software/urcap UI.
4. Logo picture.</td></tr>
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Deliverable	UR+ Component	UR+ Application Kit
Testing Artifacts	Some UR+ testing may require separate components that can assist or aid in the approval of the product. These parts must be packed or labeled separately, to distinguish between “the product” and assistive parts.	Some UR+ testing may require separate components that can assist or aid in the approval of the product. These parts must be packed or labeled separately, to distinguish between 'the product' and assistive parts.

~~4.~~6. Testing Process

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Interfaces

SectionQuestionResponse / DetailsHardware Interfaces Does the product include hardware?☐ Yes ☐ NoIf yes, does it interface with:☐ Robot Base ☐ Tool Flange ☐ Robot ArmIf connected to Robot Base, what are the supported base sizes?[Enter sizes]If connected to Tool Flange, what is the flange size and tool weight?Flange Size: [ ]
Tool Weight: [ ] kgDoes the product include an electrical interface?☐ Yes ☐ NoIf yes, is it connected to:☐

Robot Controller IO ☐ Tool IOIf it uses a communication interface, what type is required?☐ Ethernet ☐ USB ☐ RS-485 ☐ Other: [Specify]

The identified issue will be classified into four categories: Critical, Must-fix, Should-fix, Suggestion.

Some typical issues can be pre-classified in below table, it will be served as a pre-check list and cannot be interpreted as a complete checklist list given various product commodity properties.

Category	Pre-check reference	Motivation
Critical		
Must-fix		
Should-fix		
Suggestion		

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2. **UR+ Product Interface Overview**

Category	Interface Aspect	Questions / Details to Specify
Hardware	Physical Presence	Does the UR+ product contain hardware?
	Connection to Robot Base	Is it connected to the robot base? If yes, which base types are supported?

Category	Interface Aspect	Questions / Details to Specify
	Connection to Tool Flange	Is it connected to the tool flange? If yes, which flange sizes are supported?
	Mounted on Robot Arm	Is it mounted elsewhere on the robot arm? Specify location and method.
Electrical	Communication Interface	Is there an electrical or communication interface between the product and the UR robot?
	Connection to Control Box	If yes, which interfaces are used (e.g., USB, Ethernet, RS232)?
	Connection to Tool IO	If yes, which interfaces are used? Does it utilize the Performance Tool Flange?
	Power Requirements	What voltage, current, and power are required for operation?
Software	URCap Availability	Does the product include a URCap for PolyScope 5, PolyScope X, or both?
	URScript Samples	Are URScript samples provided for integration?
	External Software	Is there any external software required for operation? If yes, specify type and integration method.

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1) Let me know if you'd like this exported as a Word document or integrated into a larger deliverable.