



Interfacing Rowa Vmax[®] with WWKS 2

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Rowa Vmax®

Automated Storage and Retrieval System for Medication

Characteristics:

- Storing med manufacturer packages
- Variable storage locations
- Unlimited number of SKUs
- Up to 50,000 packages per Vmax
- Pairing of multiple Vmax possible



Videos at YouTube:

[Rowa Vmax – Intro](#)

[Rowa Vmax – Input](#)

[Rowa Vmax – Output](#)

Controlling Rowa Vmax®

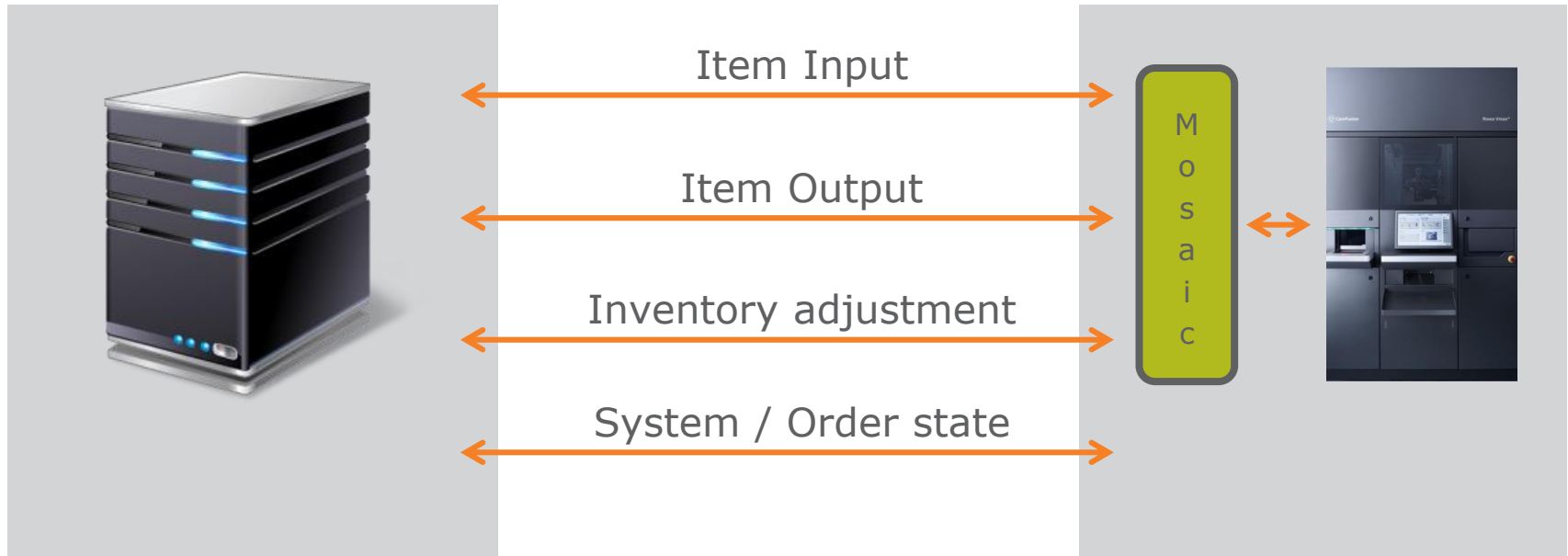
with WWKS 2 standard interface



Rowa Mosaic:

Rowa Interface Engine and Coordination of Rowa Components

Use Cases WWKS 2



Input

Input dialog – basic workflow



InputRequest

Scanned barcode



max. 3s between Request and Response!

InputResponse

Input ok (yes/no)

Item id

Item name / dosage form / packing unit

InputMessage

Item id

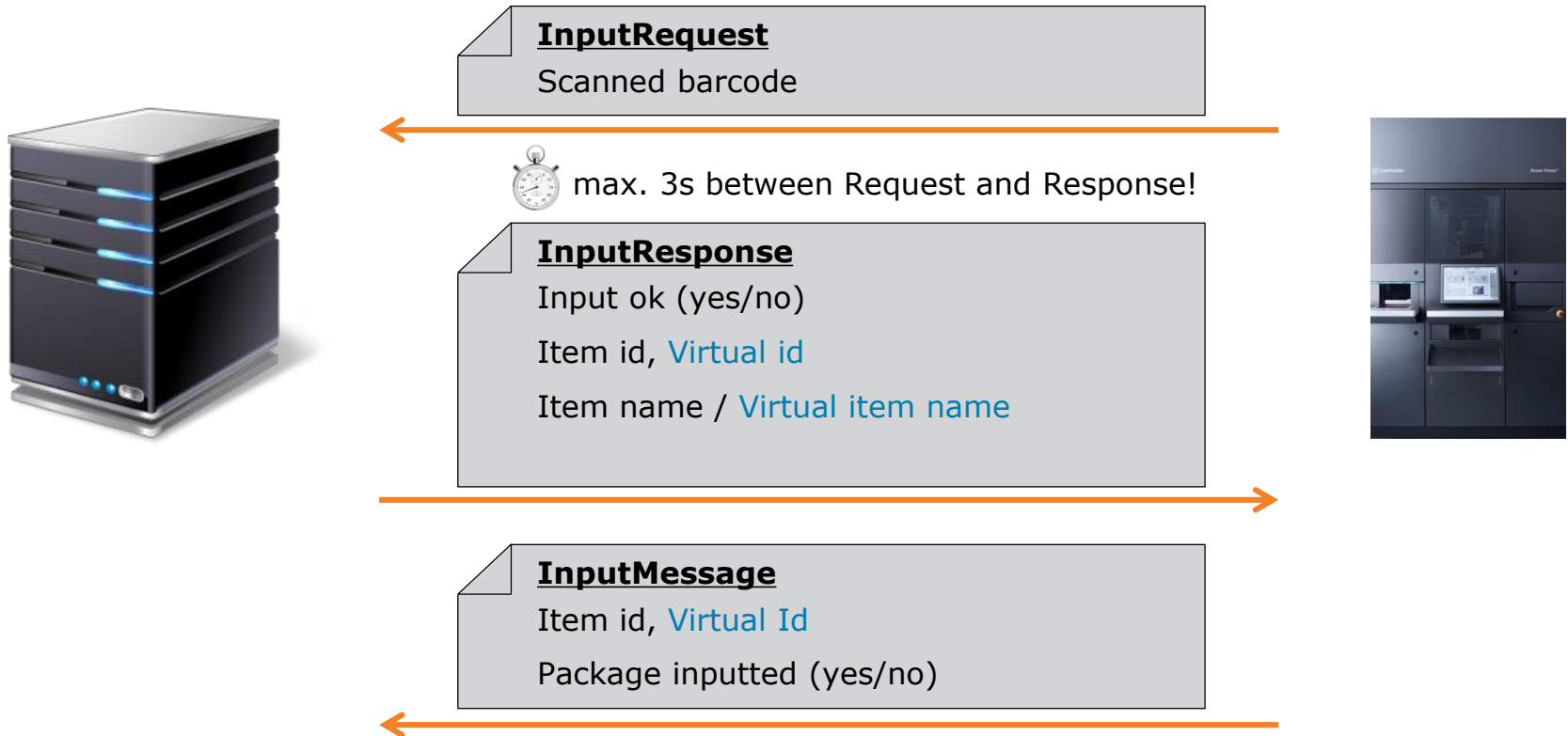
Package inputted (yes/no)



- One dialog per package
- Item id and barcode may differ
- Different barcodes may match same item id

Input

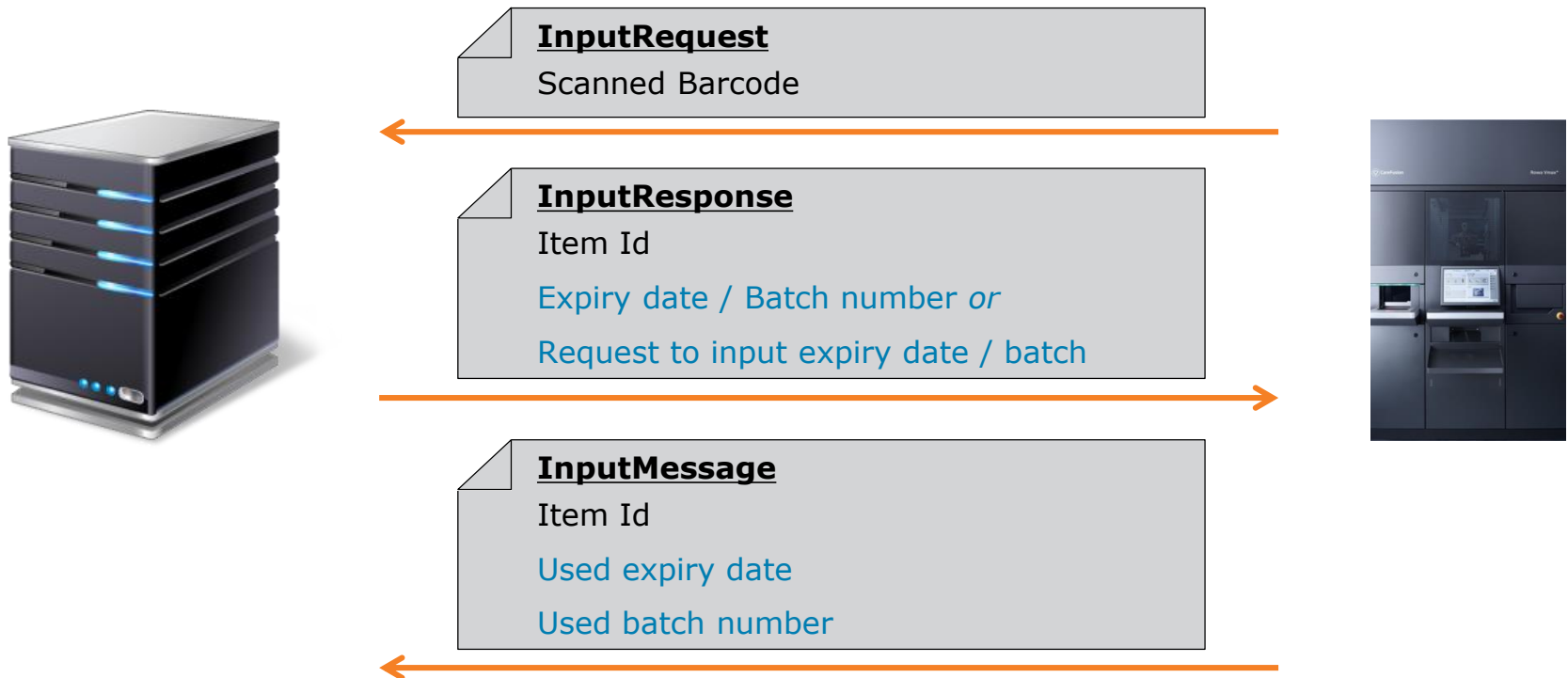
Option: Two levels of item identification - Virtual id



- To handle both AMPP (brand) and VMP(P) (active ingredient) in the robot
- Dispensing requests on both levels possible
- Different barcodes may match same item id

Input

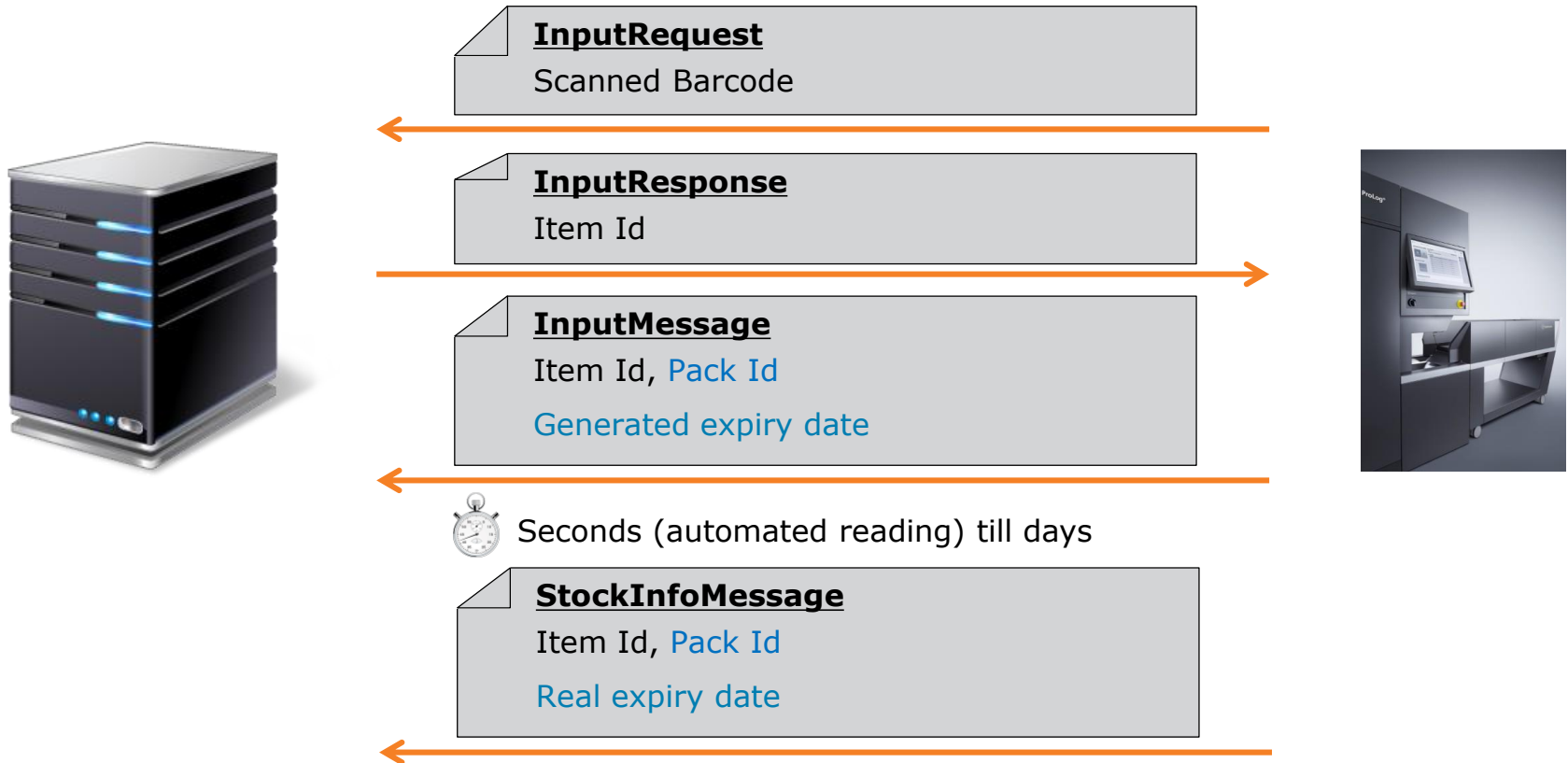
Option: Expiry- / Batch Management



- Pharmacy IT may set expiry / batch based on good receipt data (if unambiguous)
- Pharmacy IT may request user to input manually
- Vmax may calculate expiry date from input date

Item Input

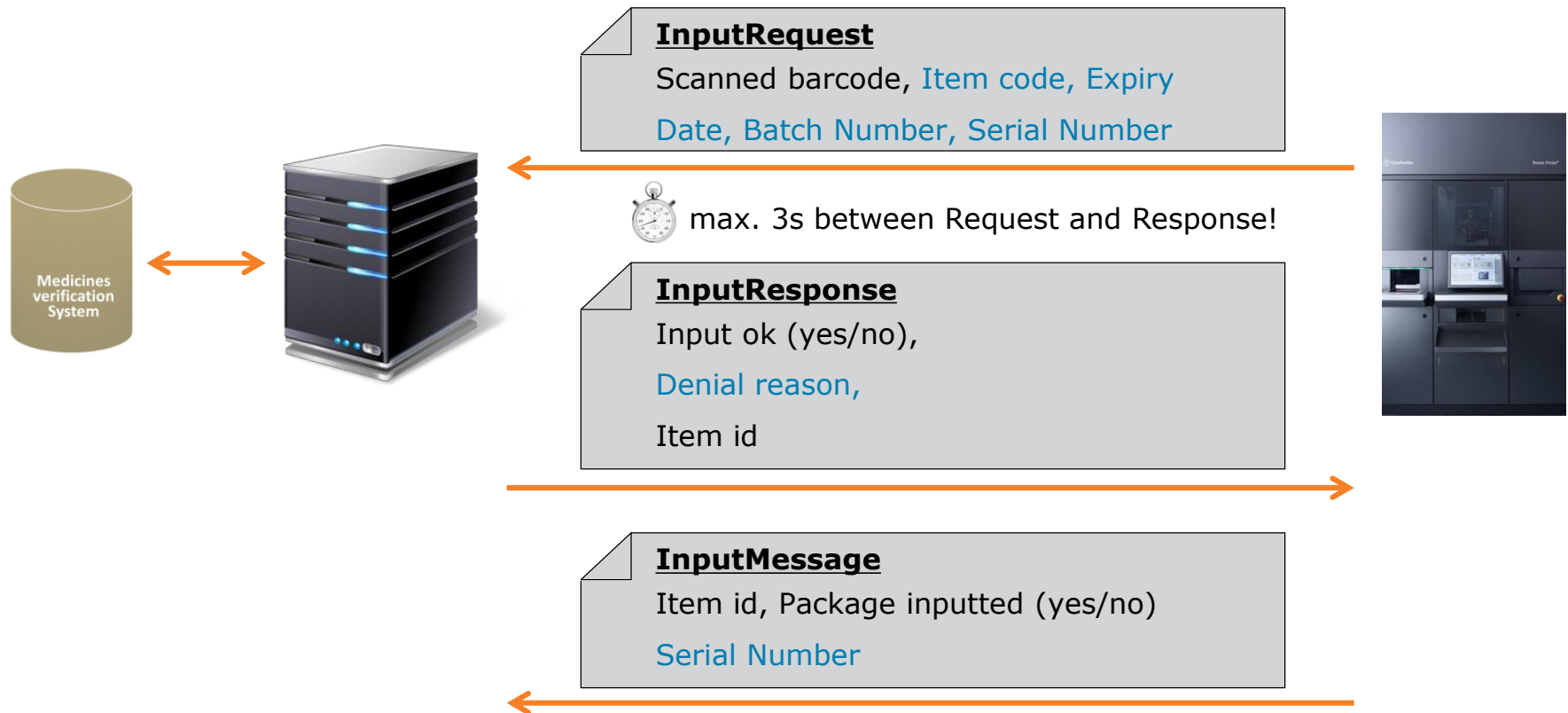
Option: Expiry date recognition with ProLog OCR



- Expiry date read by OCR is not yet available at the time of input dialoguer
- InputMessage delay would reduce input throughput
- Subsequent update of the real expiry date (active message and via inventory adjustment)

Input

Option: EU FMD – Rx serial number verification



- Rx only, requires datamatrix code on pack
- Verification against national database by pharmacy IT system
- National databases have to answer within 300ms

Input

Option: Stock management on dose level



InputRequest

Scanned barcode, **Items in current pack**



max. 3s between Request and Response!

InputResponse

Input ok (yes/no)

Item id, **Number of items in a full pack**

Item name

InputMessage

Item id

Package inputted (yes/no)



- Allows to request dispensing of doses instead of packs
- Vmax dispensing at least the requested amount of doses
- Supports storing of broken packs in the Vmax

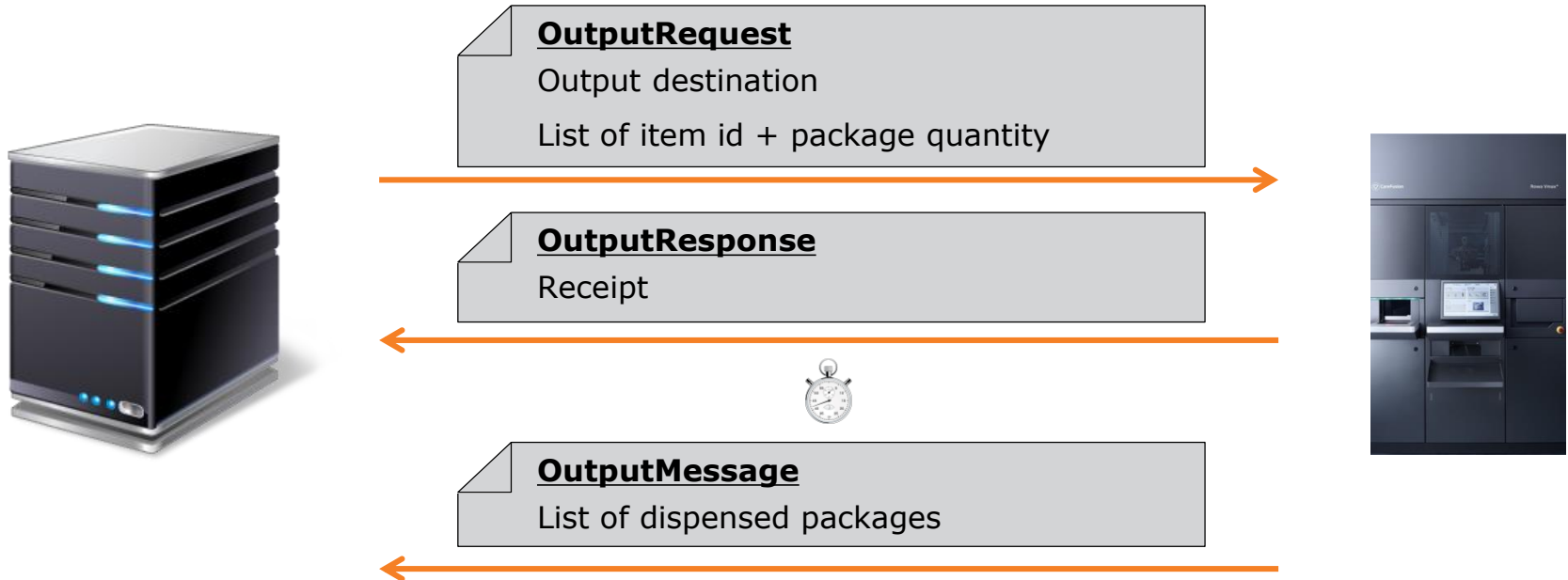
Input

Further Options

- Capture Delivery Number
- Storing cooled items inside Vmax fridge unit
- Dedicated storage locations inside Vmax
- Multiple Tenants / Stock Owners

Output

Output dialog



- OutputRequest may contain items not on stock
- Vmax dispense partial amount available
- OutputMessage lists dispensed packages only
- Determination of missing items via comparison of OutputMessage with original order

Output

Options

- Minimum Expiration Date
- Request by batch number
- Request unit doses instead of packages (requires telling number of unit doses per full package at input time)
- Dispensing into tote with number X
- Return of used tote numbers

Inventory Adjustment

Continuously



InputMessage

+1 package



OutputMessage

-1 package

-1 package

...



- Pharmacy IT may track Vmax stock continuously
- Output request may fail anyway
(e.g. by simultaneous request or picking error)

Inventory Adjustment

Initially and sporadic



StockInfoRequest

All or one item(s)

StockInfoResponse

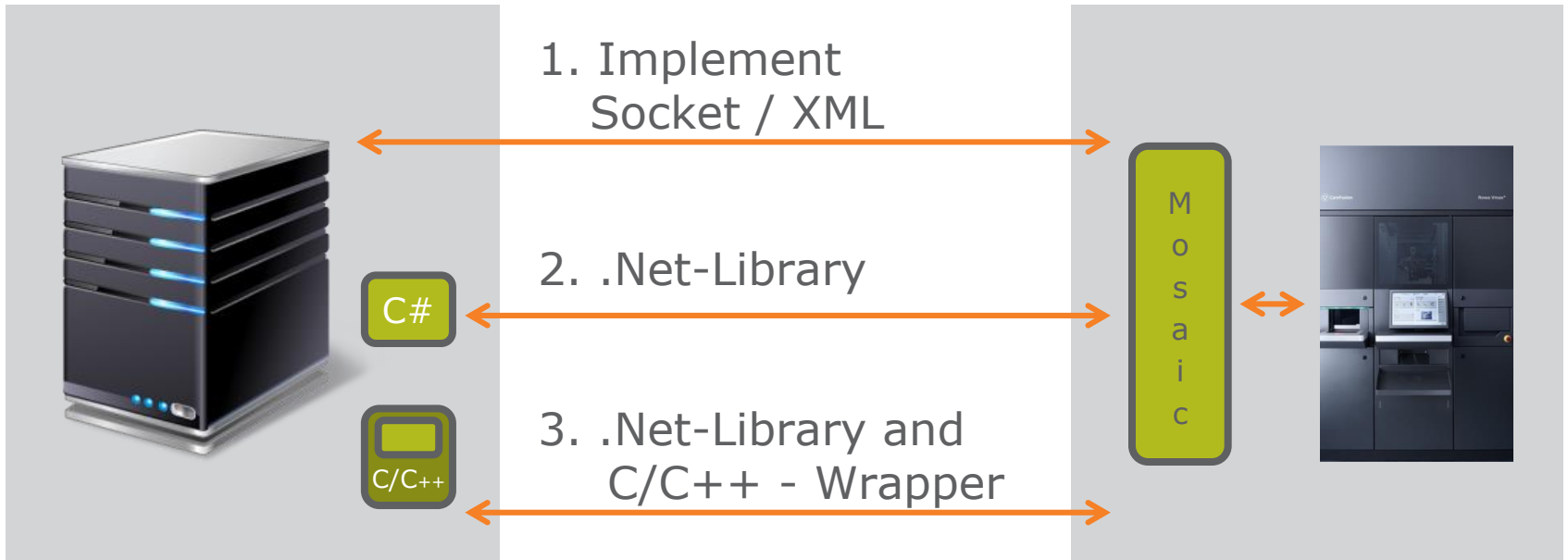
List of item quantities or list of packages



- Response for all items / packages may become huge (several MB)
- Response may contain all available information about stored packages

Technology Options

WWKS 2



Controlling Multiple Rowa Vmax® with WWKS 2



From Pharmacy IT point of view
multiple Vmax act as
one (bigger) machine!

Further Information

Internet

<http://www.rowa.de/en/wwks2/>

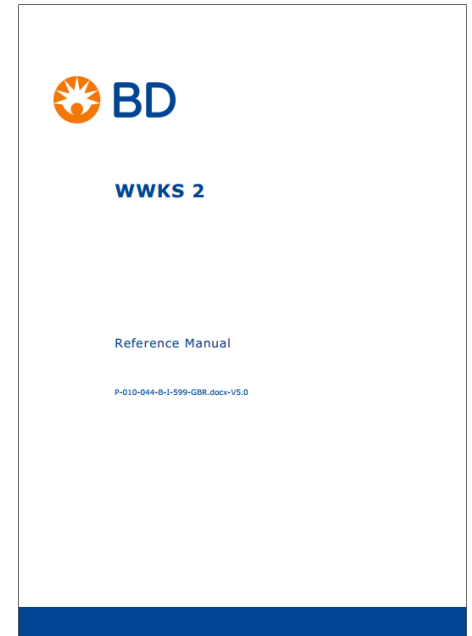
- WWKS 2 Reference Manual
- WWKS 2 SDK and Test Tools

Contact

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WWKS 2+

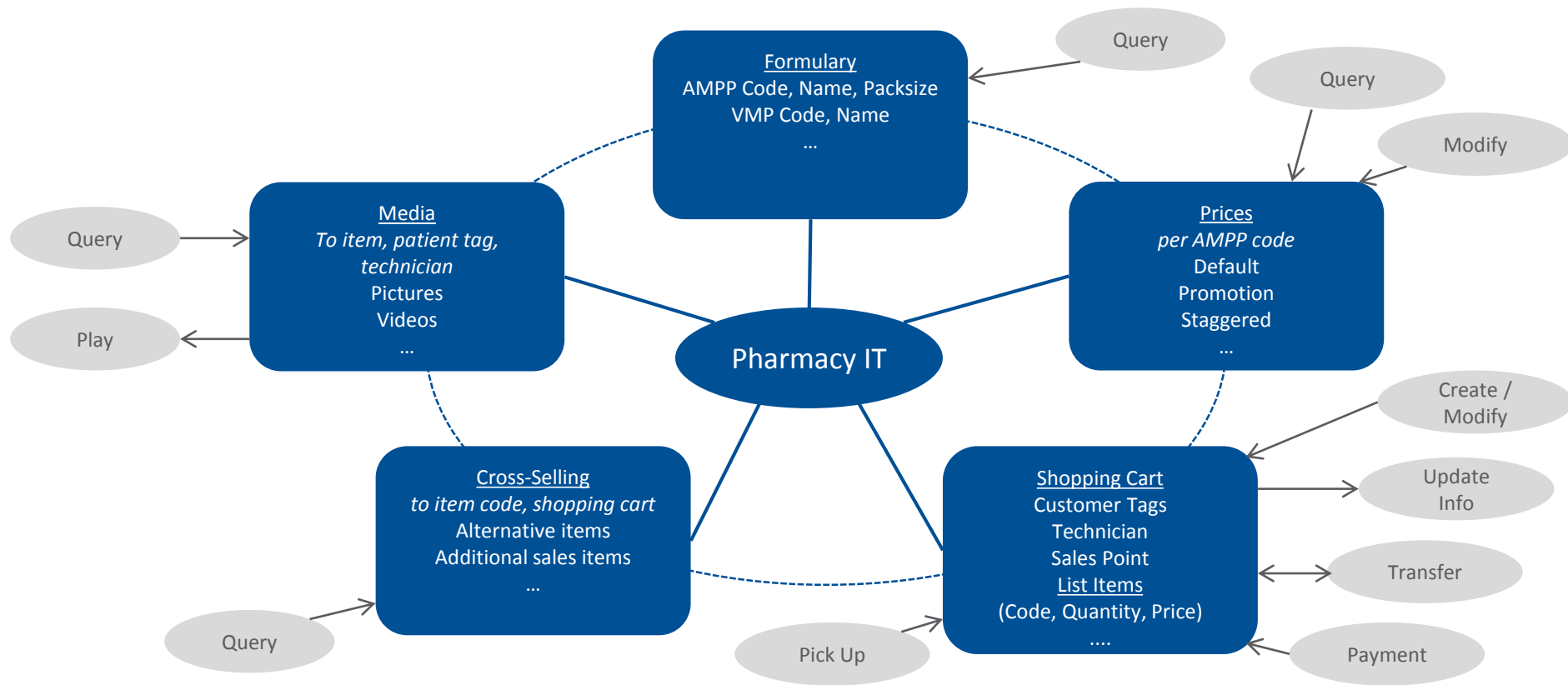
Digital Product extension

Digital Products Extension

Objectives:

- No new interface for each new device,
 - Pharmacy IT is and remains central coordination unit in the pharmacy
- Use case interfaces instead of device interfaces

Use Cases



Use cases and Devices

Use Case	POS screen	Digital OTC display	Self service terminal	Online shop	Pick-up terminal	...
Query item master data		x	X	X		
Query stock		X	X	X		
Query prices		X	X	X		
Create / modify shopping cart		X	X	X		
Announce shopping cart modification	X	X				
Transfer shopping cart			X	X	X	
Payment			X	X	X	
Pick-up			X		X	
Query cross selling data		X		X		
Play media	X	X			X	
...						

