

Surgical path and ancillary workflows: device kit sterilization

Mauro Larosa and Riccardo Banali (Dedalus S.p.A.)



HL7 FHIR DevDays 2023 | Hybrid Edition, Amsterdam | June 6–9, 2023 | @HL7 | @FirelyTeam | #fhirdevdays | www.devdays.com

ORGANIZED BY

firely

HL7[®]
International

Who we are

Mauro Larosa

Technical Product Owner at Dedalus S.p.A

12 years experience in managing Surgical Process and Operating Theatres Software.

Co-authored, as domain expert, the FHIR API for surgical process



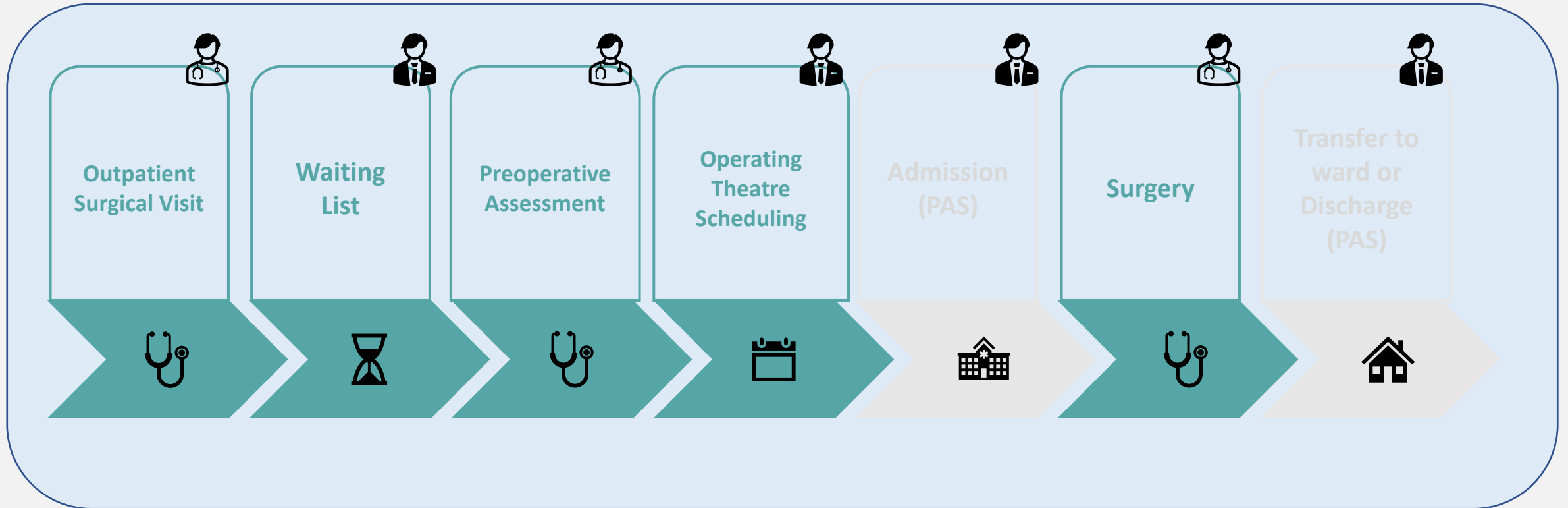
Riccardo Banali

Solution Architect at Dedalus S.p.A

Involved in the definition of a common company architecture including API specification and FHIR resources profiling.



Context: The Surgical Process



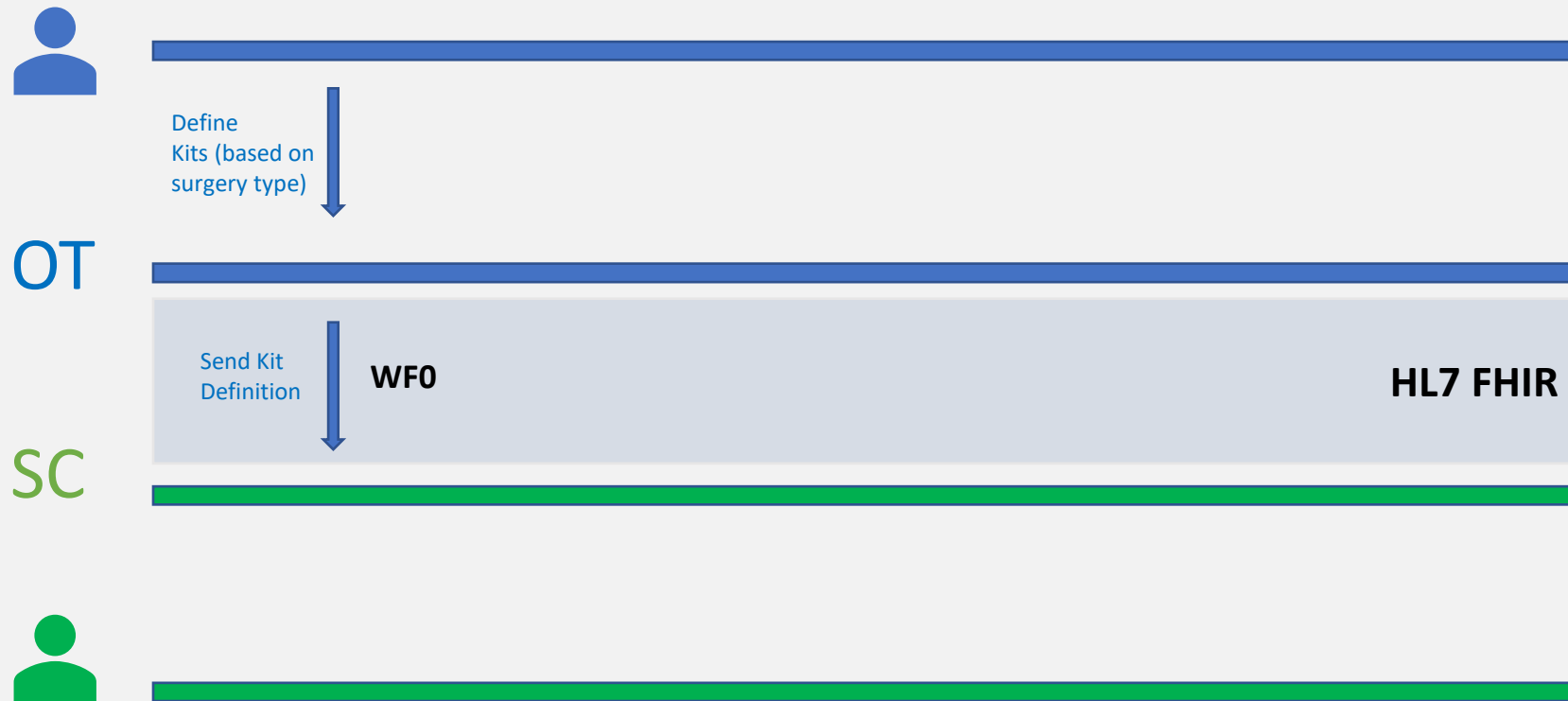
Context

- In Surgical Process Management, the device kit sterilization is becoming increasingly important.
- A device kit is a set of tools/devices needed to execute a specific surgery (think to a scalpel, for example).
- A single device can be reused in different surgery events, but it needs to be sterilized for patient safety.
- The Sterilization Center (SC) is the place where devices are sterilized to be reused in a new surgery event.

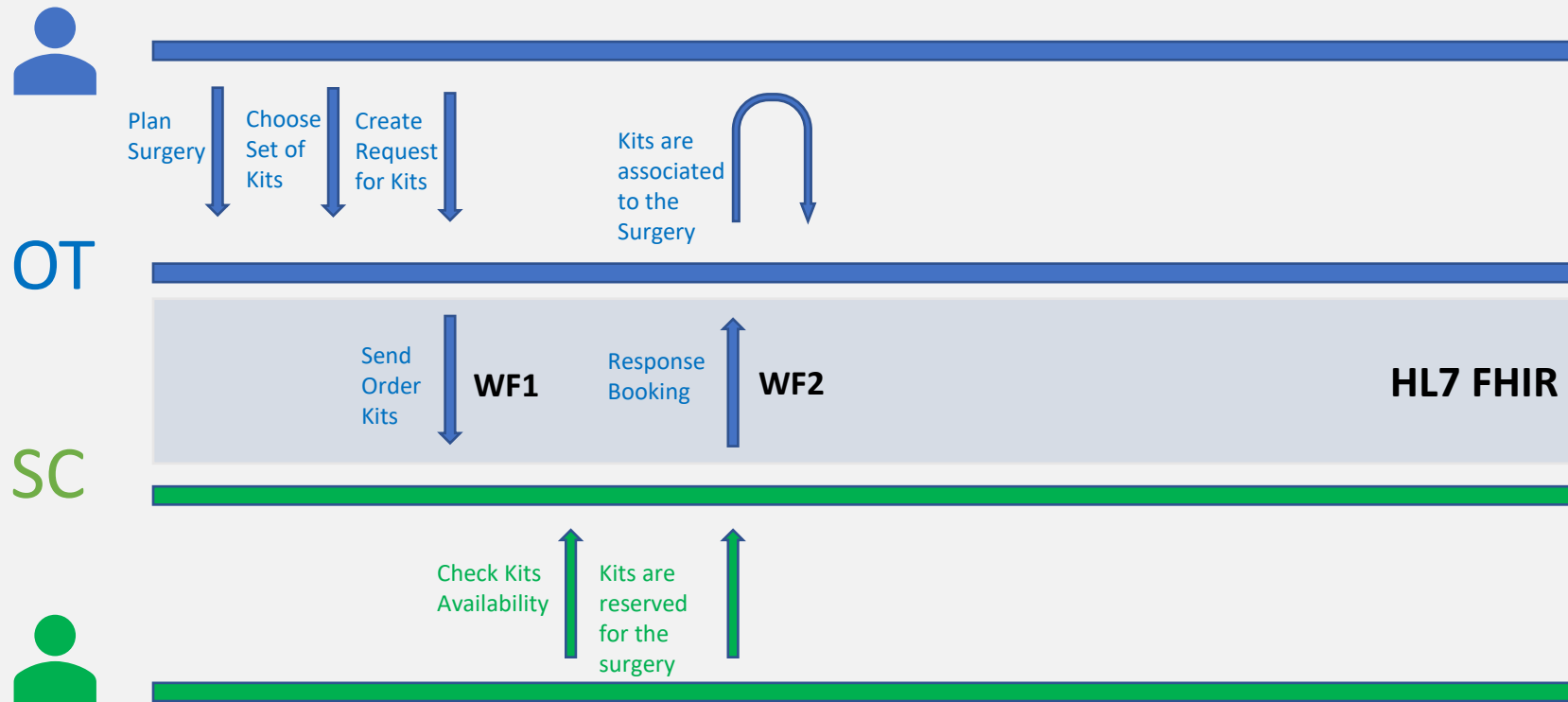
What we did

- We created a (FHIR) model to standardized the process that involves **Operating Theatres (OT), Device Kits** and **Sterilization Center (SC)**.
- The process starts when a surgery is planned in a specific **Operating Theatre (OT)**
- The nurse defines which **Device Kits** are needed for the surgery
- The **Sterilization Center (SC)** provides the device kits
- The surgeon uses the device kits
- The process is closed when the surgery is completed

The process – Step0: Kit Definition



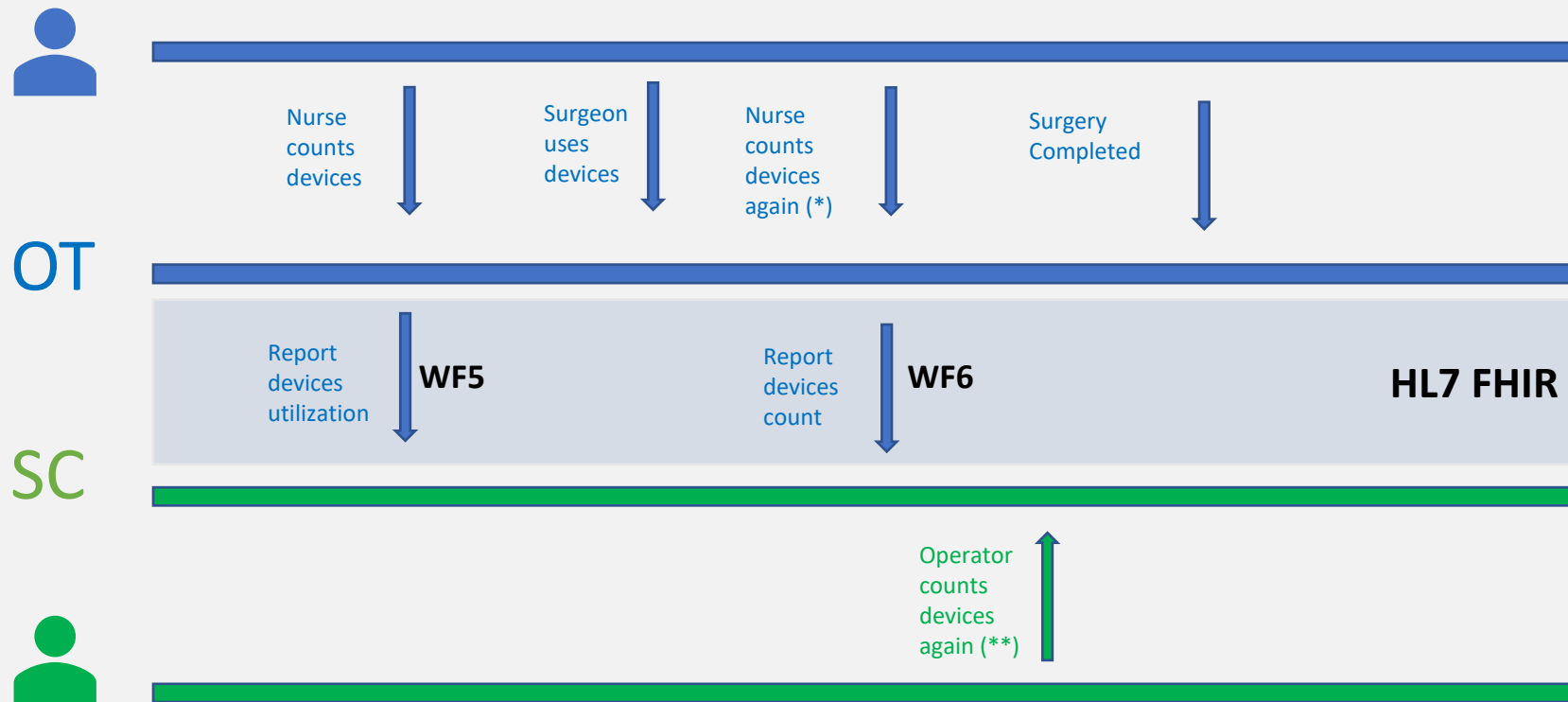
The process – Step1: Kit Order



The process – Step2: Kit sent to OT (day before surgery)



The process – Step3: Devices utilization (Surgery Day)



(*) for patient safety
 (**) to verify no device is lost

FHIR Modelling

Premises

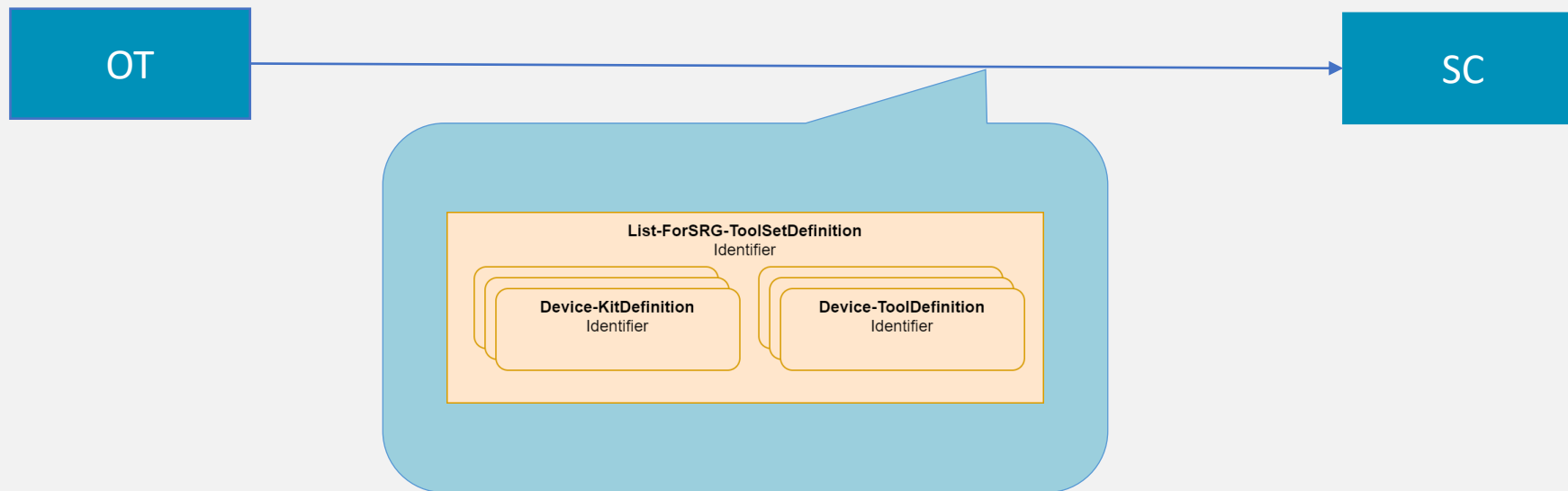
1. FHIR Messaging

2. Actors and items involved:

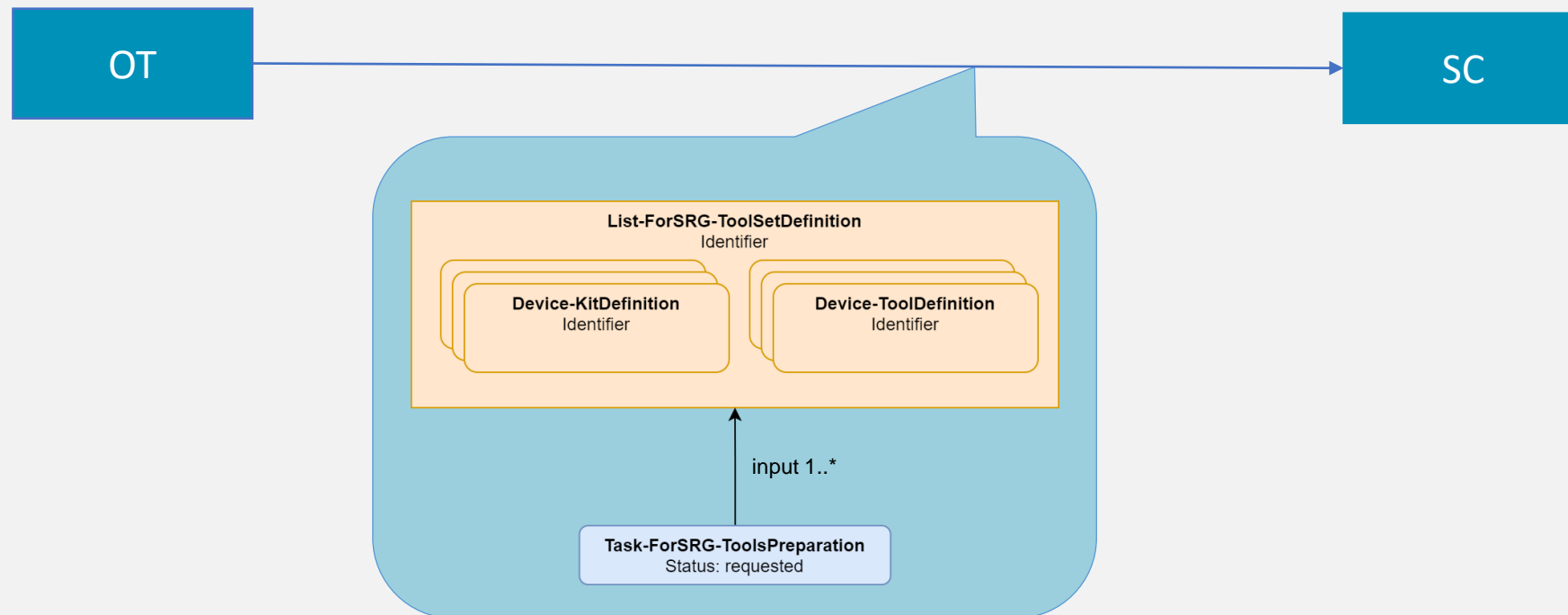
- **Operating Theatre (OT):** actor who manages the surgical workflow;
- **Sterilization Center (SC):** actor in charge of providing and maintaining the device kit and tool;
- **Device Tool:** surgical tool (e.g., surgical scalpel);
- **Device Kit:** one or more surgical tools managed and maintained together (e.g., kit surgery-1 composed by surgical scalpel and forceps)

3. OT and SC share the **Device Master** periodically to keep the systems aligned.

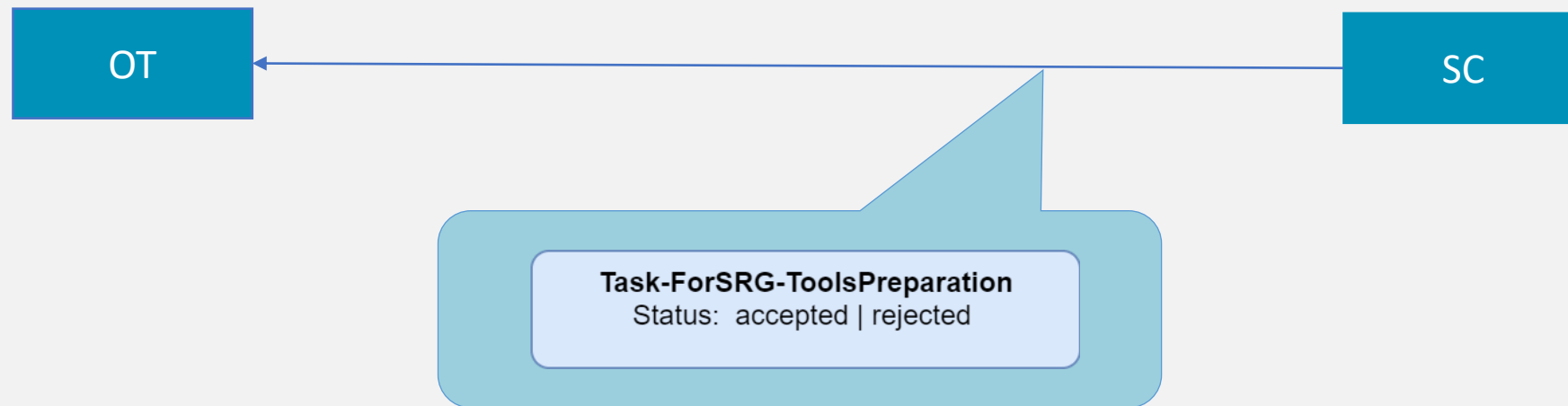
Workflow #0: Device Kits definition



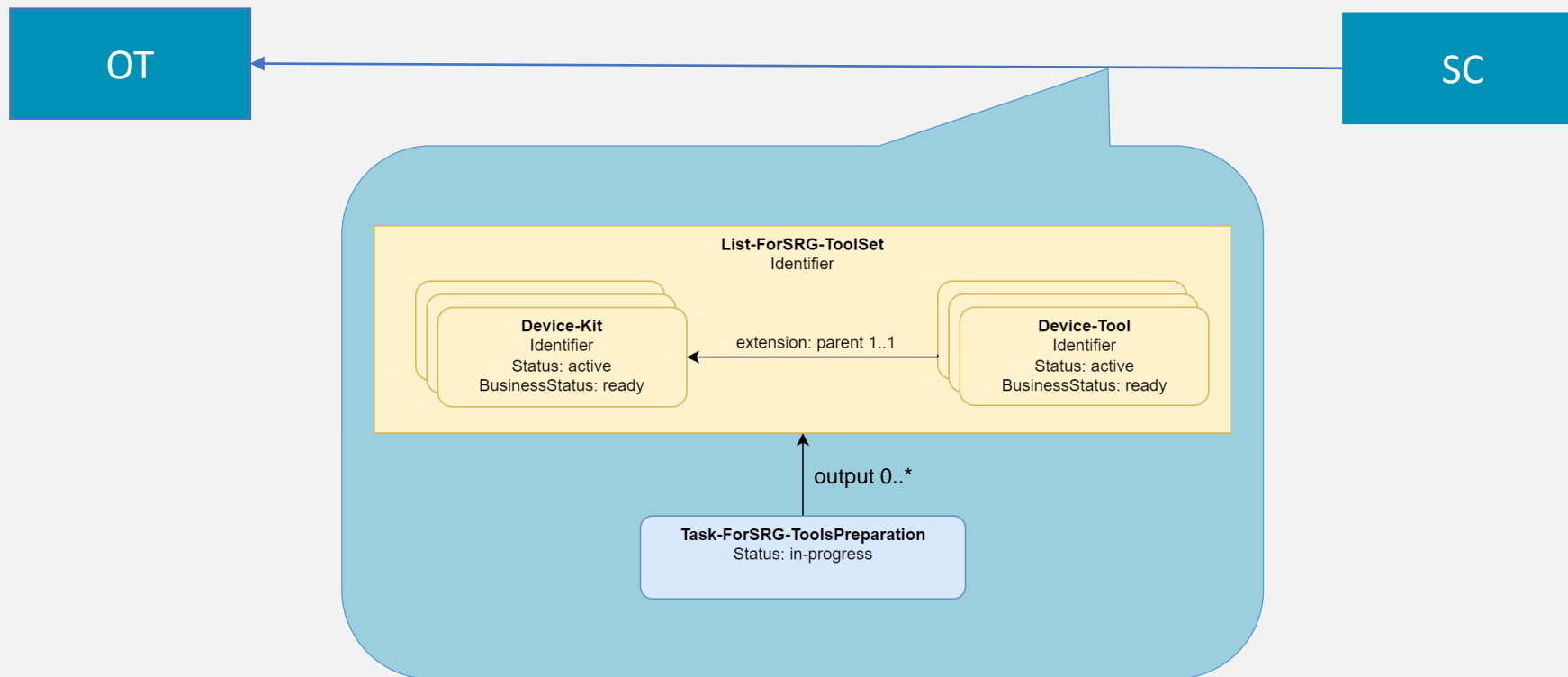
Workflow #1: Device Kits request



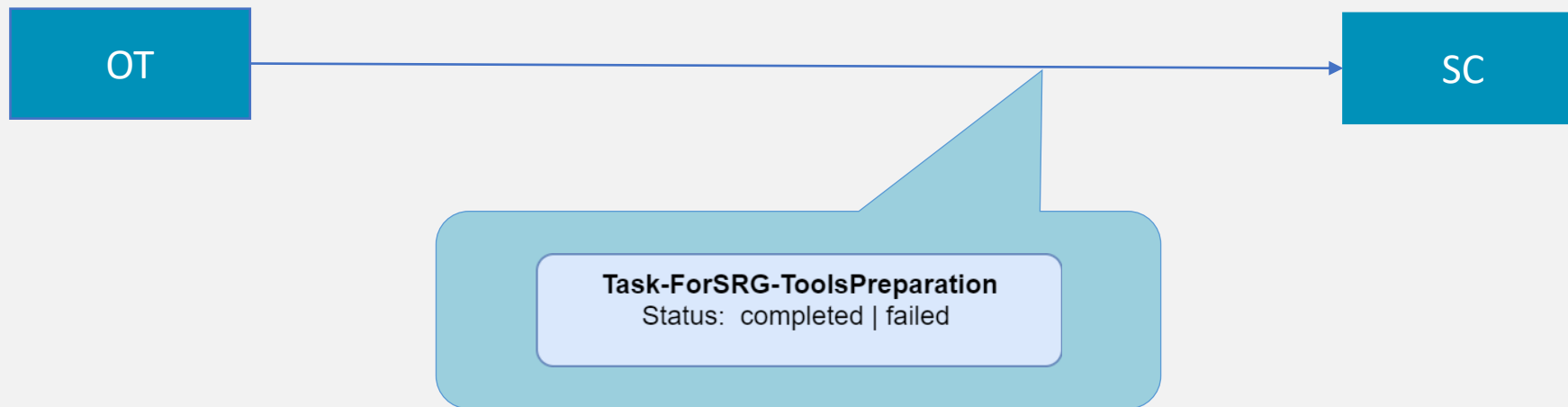
Workflow #2: Device Kits availability feedback



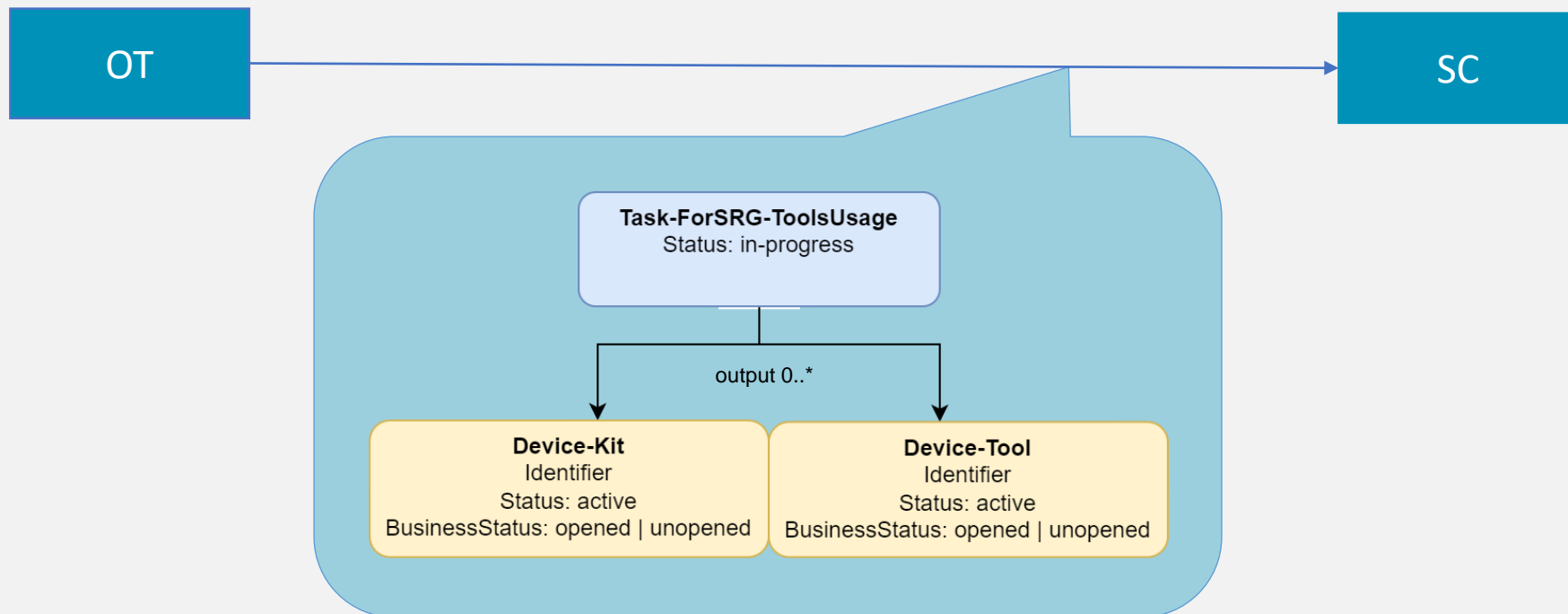
Workflow #3: Device Kits delivery



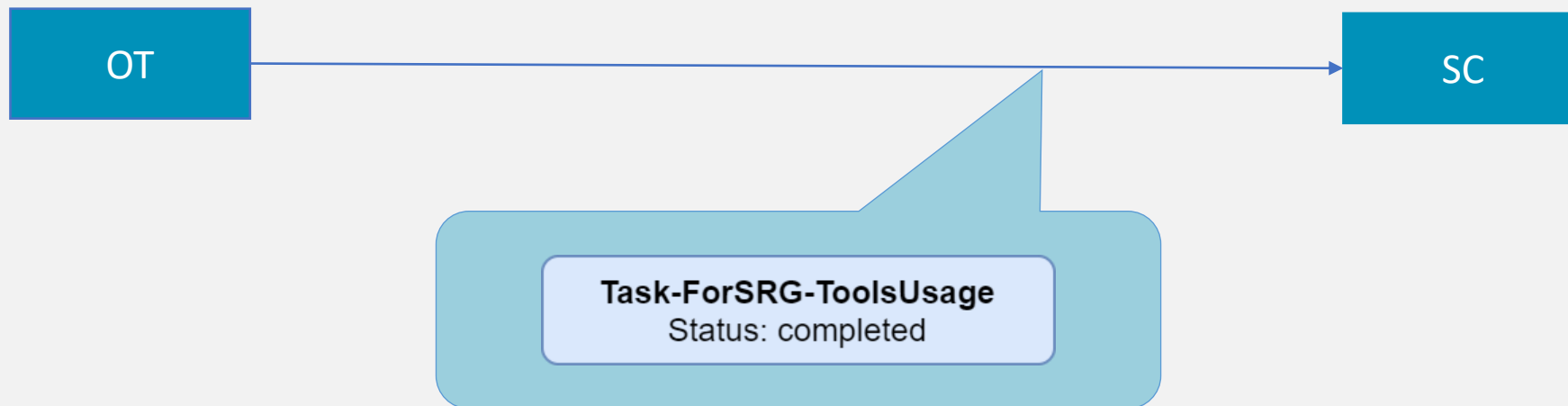
Workflow #4: Device Kits validation



Workflow #5: Device Kit usage status sharing



Workflow #6: Post-surgery device count



Benefits

- Integration between Operating Theatre and Sterilization Center
- No manual task anymore
- Patient Safety
- Costs reduction



Contact

- During DevDays, you can find / reach us here:
 - Via Whova App – Speaker’s Gallery
 - Email:
 - mauro.larosa@dedalus.eu
 - riccardo.banali@dedalus.eu

ORGANIZED BY

