



Annual Users' Conference

**ADVANCING RADIATION SAFETY.
EMPOWERING PROGRESS.**

M Resort, Henderson, NV | June 15 – June 18



MIRION
TECHNOLOGIES

*Advancing Radiation Safety.
Empowering Progress.*

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End-to-End Pharmaceutical Visibility and Delivery

ec² Software Solutions

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Mirion Connect | Annual Users' Conference 2026

Henderson, NV

Connected Nuclear Medicine Solutions

**Supporting safe, compliant, and efficient
workflows from radiopharmaceutical
production to patient care**

How Mirion helps -> protect people, measure with confidence, and connect operations across nuclear medicine



The Nuclear Medicine Environment

Understanding the workflow from production to patient care



Mirion Instrumentation at the Core

Trusted for radiation safety, measurement, shielding, dosimetry, and QA



The Software Foundation

- **ec2 Software Ecosystem:** *Connecting ordering, visibility, traceability, and documentation*
- **Workflow Management Software** *at the hospital, radiopharmacy, and manufacturer: Streamlining patient, dose, inventory, health physics, and compliance workflows*



What does ec² software actually do?

- *Manage day-to-day operations at the radio-isotope producer, radiopharmacy, and nuclear medicine department*
- *Drive radiopharmaceutical orders throughout the supply chain – starting when the hospital or clinic places the order*

Four Groups, Four Perspectives on Every Order



The Hospital

THE CUSTOMER PLACING ORDERS

Doctors and technicians at hospitals and clinics need specific radiopharmaceuticals for patient imaging and treatment. They use one of our ordering tools to request what they need.

Their tools: NMIS (desktop program installed at the hospital), WebOLO (a website), or NucX (a newer web app being built to replace NMIS).



The Pharmacy

NUCLEAR PHARMACY FILLING ORDERS

Specialized pharmacies that prepare, quality-check, and deliver radiopharmaceuticals. They receive orders through the hub, fill them, and ship them out — often same-day.

Their tools: BioRx (order management & dispensing), BioTrax QMS (manufacturing quality management), BioPointe (mobile delivery tracking).



The Radioisotope Producer

SUPPLY CREATION & DISTRIBUTION ORIGATION

Radioisotope producers manufacture the isotopes used in radiopharmaceuticals. They must tightly coordinate production schedules, irradiation capacity, and time-sensitive distribution to ensure reliable supply to drug owners and radiopharmacies, while meeting regulatory requirements.

Their tools: BioRx and BioTrax QMS for production, quality, and compliance management, plus Lisbon for coordinating complex order logistics and downstream distribution.



The Drug Owner

PHARMACEUTICAL MANUFACTURER OVERSEEING ORDERS

Drug owners are the pharmaceutical companies that own the radiopharmaceutical products. They need visibility into every order — which pharmacies (CMOs) are filling them, which hospitals are receiving them, and how clinical trials are progressing.

Their tool: Lisbon — a web platform providing end-to-end order visibility, CMO routing, and clinical study tracking.



The Central Hub

OLO — ONLINE ORDERING

The central switchboard. Every order from every hospital passes through here on its way to the right pharmacy. It routes orders, tracks status, and keeps both sides in sync.

Runs in: Our cloud servers. Hospitals and pharmacies connect to it over the internet.

AT THE HOSPITAL

A technician places an order

- A nuclear medicine technician or doctor needs a specific radioactive medicine for a patient.
- They open their ordering tool and enter the details: which medicine, how much, when they need it, and which patient it's for.
- They can do this from a desktop program installed at the hospital (**NMIS**) or a website they log into (**WebOLO**).

What's sent

- Product name
- Quantity
- When it's needed (calibration date/time)
- Patient info
- Prescribing doctor
- Pharmacy to send it to.

Hospital

NMIS

WebOLO

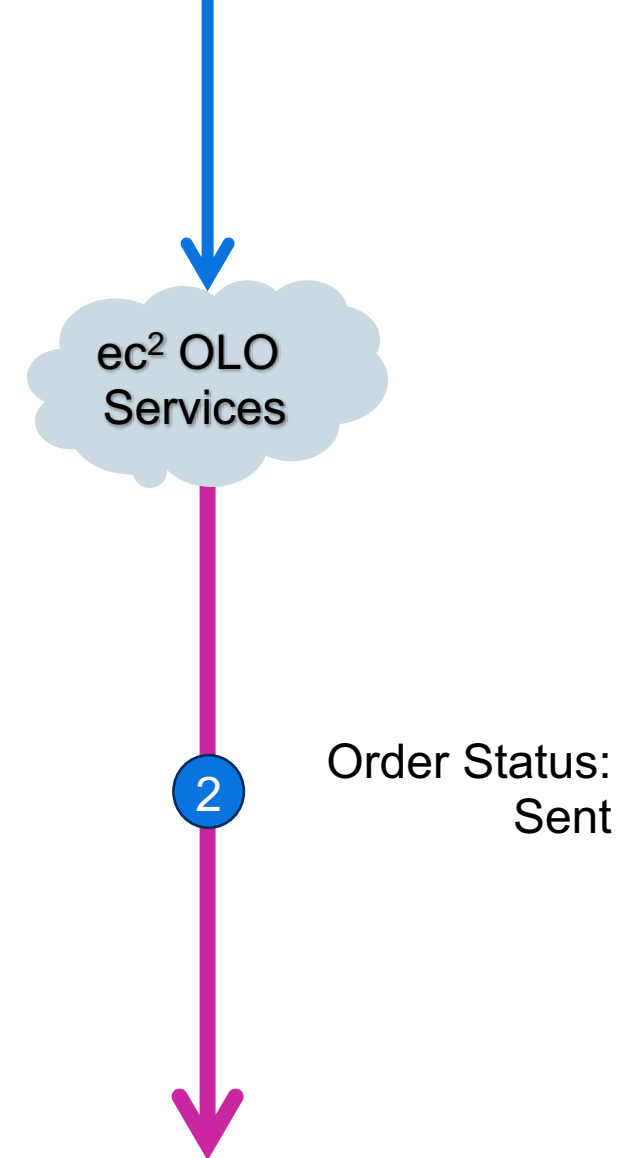
1

Order Status:
Created

AT THE CENTRAL HUB (OLO)

The order arrives at the switchboard

- *Regardless of which tool the hospital used, the order lands at ec²'s central hub.*
- *Think of this as the post office – it receives the order, logs it, assigns it a tracking number, and files it in the right pharmacy's "inbox."*
- *At this point, the order's status is set to "**Sent**" – it's been accepted by the hub and is waiting for the pharmacy to pick it up.*

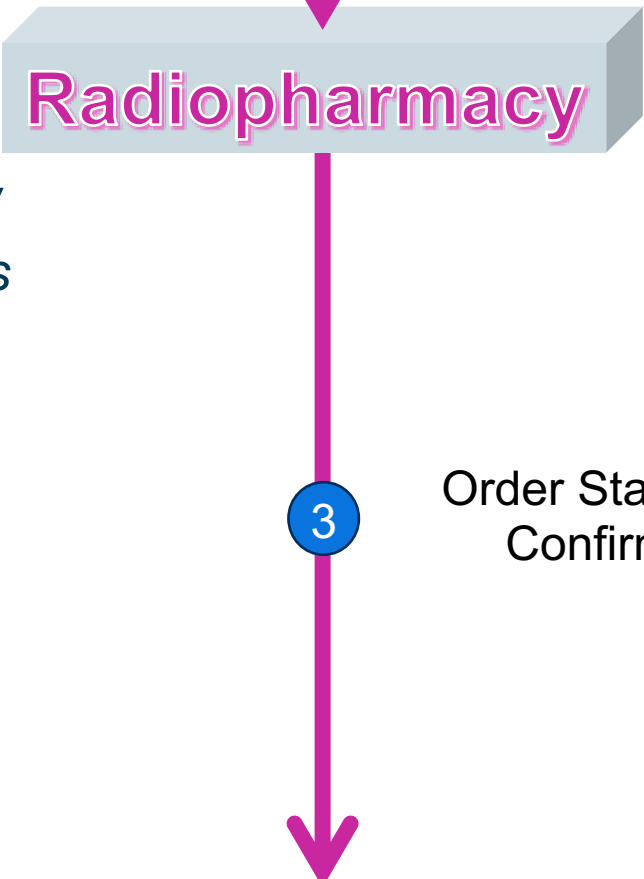


AT THE PHARMACY

The pharmacy checks for new orders

- At each pharmacy, a small background program calls the central hub every 30 seconds: "Do you have any new orders for us?"
- When there are new orders, the order is downloaded and translated into the pharmacy's own format — matching product codes, converting measurement units, and securing patient information with encryption.

- The downloaded order now shows up in the pharmacy's desktop software (BioRx).
- A pharmacist reviews the details and confirms the order for the **right product, dose, & time**
- The order status updates to "**Confirmed.**"



Radiopharmacy

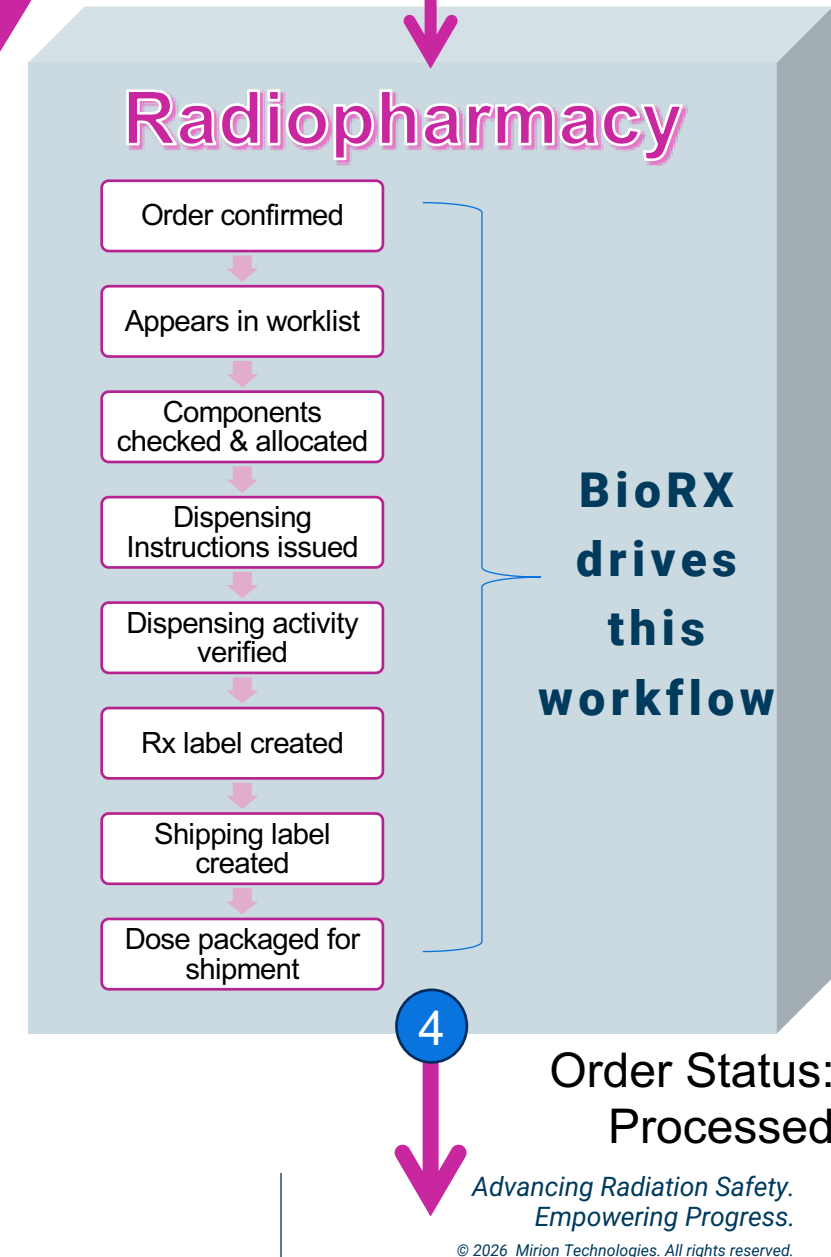
3

Order Status:
Confirmed

AT THE PHARMACY

Preparation of the radiopharmaceutical

- *This is when the physical work happens. The pharmacist:*
 - *Pulls the right radioactive material from inventory*
 - *Prepares and measures the exact dose*
 - *Runs quality checks (these are regulated, radioactive materials)*
 - *Labels everything with tracking and safety information*
 - *Packs it into a shielded shipping container*
- *The order status updates to "Processed."*



FROM PHARMACY TO HOSPITAL

The radiopharmaceutical ships out

- The container goes out the door for delivery – usually by courier, sometimes by the pharmacy's own drivers.
- Pharmacist marks the order as shipped in BioRx, which records the carrier, tracking number, and dispatch time.
- The order status updates to **"Shipped."**
- *ec²* has another phone-based software called **BioPointe**. Drivers scan and confirm delivery in real-time.

The hospital can see the order's progress in real time:
"Confirmed → Processed → Shipped → Delivered"

BioPointe



5

Order Status:
Shipped

Hospital

5

Order Status:
Delivered

AT THE HOSPITAL

Receiving the radiopharmaceutical

- *The radiopharmaceutical arrives.*
- *The Technologist or RSO performs surveys of the shipping container and records container conditions. This is logged in **NMIS** too.*
- *The hospital logs receipt in their system; the order's lifecycle is complete and it is now part of the department inventory.*
- *The dispensing details — exact activity, lot number, volume — are also available, pulled from the pharmacy's records through the same automated pipeline.*



Hospital

NMIS

6

Order Status:
Received

AT THE HOSPITAL

The dose is administered to the patient

- *The patient arrives for their procedure.*
- *The technologist confirms the patient, the procedure, and the prescription.*
- *Before administration, the dose activity is verified with the dose calibrator. Activity is recorded.*
- *The dose is given to the patient for their scan or treatment.*
- *If needed, a residual dose is also measured.*
- *A "dose drawn" record is sent back through the system so the pharmacy has confirmation that the dose was actually used – closing the loop.*



Hospital

Patient procedure details are reviewed

Pharmaceutical dose activity is verified

Dose is administered

Residual activity recorded

Disposal method indicated

**NMIS
drives
this
workflow**

7

Order Status:
Drawn Dose

NMIS Focus – At the Clinic

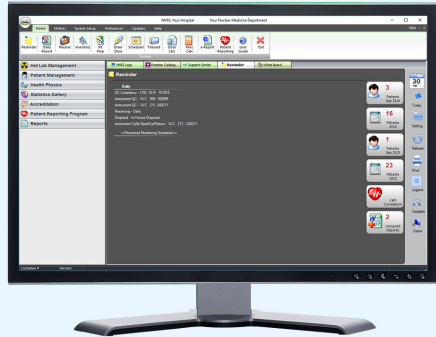
Department management for nuclear medicine operations

NMIS brings connected workflow visibility into the daily operation of the nuclear medicine department

ec² Software Ecosystem

Hospital / Clinic

NMIS



What NMIS Supports



Department Workflow

- Patient-specific workflow & scheduling
- Department workflow
- Dose receipt



Ordering & Inventory

- Online ordering
- Inventory management



Health Physics & Compliance

- Health physics tracking
- Compliance documentation



Visibility & Reporting

- Reporting
- Operational record

BioRX Focus – At the Radiopharmacy

Workflow management for nuclear pharmacy

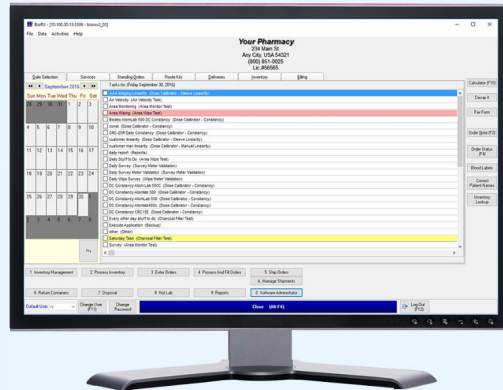
BioRX is the circulatory system of the radiopharmacy, driving operations from order management to dispensing to compliance.

What BioRX Supports

ec² Software Ecosystem

Radiopharmacy

BioRX



Streamlined Inventory Management

- Single view for all items
- Track expired statuses
- Print labels; transfer locations



Online Ordering

- Direct updates to/from hospital / clinic
- Real time alerts for order changes
- Delivery confirmation



Health Physics & Compliance

- Dose Calibrator QC Checks
- Health physics tracking
- Sealed Source inventory



Management Visibility & Reporting

- Kit Prep, Dispensing
- Customizable reporting options



Real-Time Dispensing

- Documentation with precise filled amounts
- Calculation of current vs needed activity



Billing and Invoice Management

- Track billing codes
- Create and send invoices
- Generate reporting

BioTrax-QMS: For the radiopharmaceutical manufacturer

Quality Management System designed for unique needs of pharmaceutical production

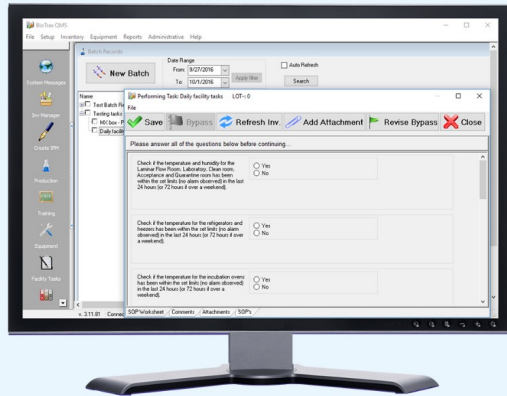
BioTrax-QMS bridges the gap to ensure compliance from inventory to employees

What BioTrax Supports

ec² Software Ecosystem

Manufacturer

BioTrax



Streamlined Inventory Management

- Cradle-to-grave tracking
- Barcode Labeling
- MID system
- Re-order alerts



Document Repository

- Version Control
- Audit Trail
- SOP Management
- Document check-in/out
- Electronic Signatures



Electronic Batch Records

- Compliance enforcement
- Barcode scanning
- Deviation tracking
- File attachments
- Audit Trail



Equipment Management

- IQ/OQ/PQ Tracking
- Compliance enforcement & scheduling
- Multi-facility Support



Employee Training

- Mandatory training gates
- Configurable exams
- Admin Approvals
- Retraining schedules



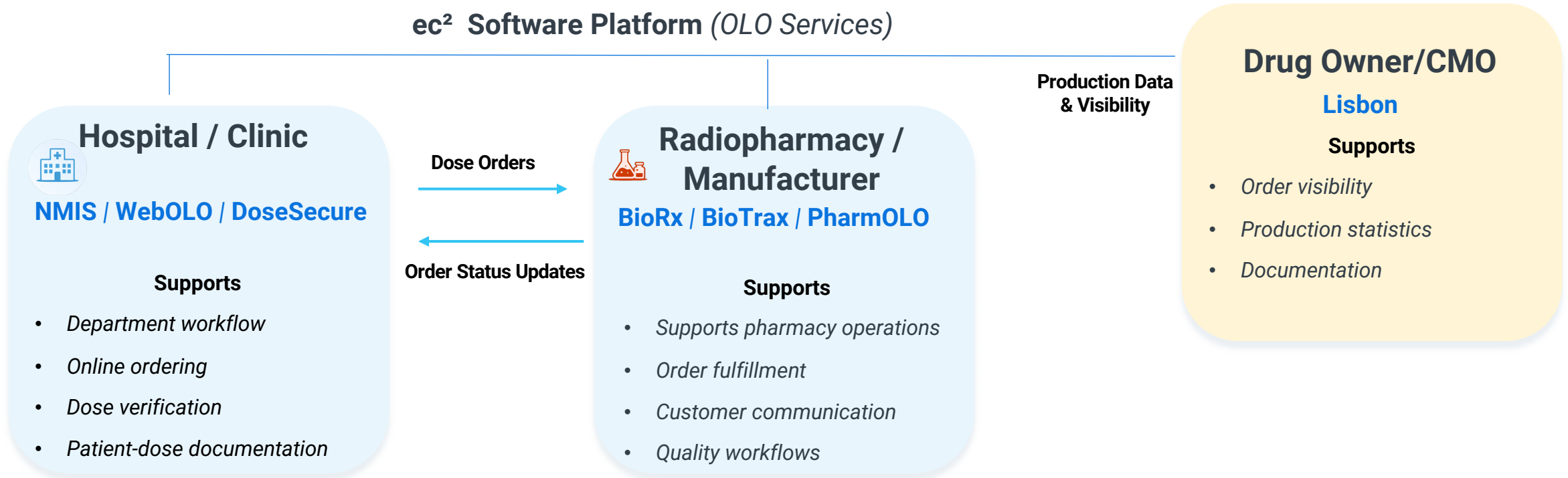
Facility Tasks

- Scheduled tasks
- Signature Verification
- System Message integration
- Daily Activity Logs

Beyond the Pharmacy/Clinic workflow

- *The Drug Owner*
- *The CMO*
- *The Isotope Producer*

ec² Software Ecosystem: Connecting the NucMed Workflow



NMIS:

- Patient admin/specific
- Communication to radiopharmacy
- Efficient dose ordering
- Health physic requirements
- Hot lab management

BioRx:

- Order processing, Fulfill, Ship
- Complete management system for radiopharmacy
- Incorporate health physics, hot labs, reports

BioTrax:

- Validation/Compliance/Audit Trail
- Electronic batch record/analysis
- Recipe on how to make a drug
- Quality assurance software

Lisbon:

- Drug order visibility
- Real time – status, submitted, administrated
- Paper trail

Lisbon Advantage: “Order-to-Cash” Example

The Problem

- ❑ Drug owners rely on pharmacies to report orders successfully delivered at the end of the week or month
- ❑ Invoicing, 340B verifications, Reimbursements and Revenue recognition cannot begin until the orders are accounted for, processed, and managed.
- ❑ Manual reports from each of the pharmacies are often burdensome to processes, prone to typographic errors, and often miss changes such as cancellations.

How Lisbon Helps

- ✓ Drug Owner has real-time visibility to orders delivered
- ✓ Cancellations are automatically updated including cancellation codes, allowing reimbursement rates aligned with the process stage of dose cancellation
- ✓ Manual processing of pharmacy order reports is eliminated
- ✓ Audit-preparedness and data integrity is guaranteed
- ✓ Order-to-Cash timeline is dramatically reduced

Orders											Columns ▾	Export	Refresh ▾
Filter by: Submitted ▾ ☐ Friday, May 1, 2026 to ☐ Monday, June 1, 2026													
R #	Status	Product	CMO Name	Customer Name	Order #	Submitted At	Calibration Date/Time	Calibration Activity	340B	Credit			
145735	Confirmed by Mfg.	PET Test Product1	Demo BioRx Pharm. (CMO) #2	Demo Hospital #1	847	5/26/2026, 5:03 PM	5/28/2026, 2:30 PM	8.000 mCi	false	\$0.00			
145733	Confirmed by Mfg.	PET Test Product1	Demo BioRx Pharm. (CMO) #2	Demo Hospital #1	847	5/26/2026, 5:03 PM	5/28/2026, 1:30 PM	8.000 mCi	false	\$0.00			
145734	Confirmed by Mfg.	PET Test Product1	Demo BioRx Pharm. (CMO) #2	Demo Hospital #1	847	5/26/2026, 5:03 PM	5/28/2026, 2:00 PM	8.000 mCi	false	\$0.00			
145741	Confirmed by Mfg.	PET Test Product1	Demo BioRx Pharm. (CMO) #2	Demo Hospital #1	848	5/28/2026, 8:51 AM	5/29/2026, 5:00 PM	8.000 mCi	false	\$0.00			
145739	Confirmed by Mfg.	PET Test Product1	Demo BioRx Pharm. (CMO) #2	Demo Hospital #1	850	5/28/2026, 11:56 AM	6/2/2026, 1:00 PM	8.000 mCi	false	\$0.00			
145738	Cancellation Request Rejected By Mfg.	PET Test Product1	Demo BioRx Pharm. (CMO) #2	Demo Hospital #1	851	5/28/2026, 1:44 PM	6/5/2026, 3:30 PM	8.000 mCi	false	\$0.00			
145749	Confirmed by Mfg.	PET Test Product1	Demo BioRx Pharm. (CMO) #2	Demo Hospital #1	852	5/30/2026, 11:20 AM	5/30/2026, 7:30 PM	8.000 mCi	false	\$0.00			
145748	Confirmed by Mfg.	PET Test Product1	Demo BioRx Pharm. (CMO) #2	Demo Hospital #1	852	5/30/2026, 11:20 AM	5/30/2026, 7:00 PM	8.000 mCi	false	\$0.00			
145746	Confirmed by Mfg.	PET Test Product1	Demo BioRx Pharm. (CMO) #2	Demo Hospital #1	853	5/30/2026, 11:44 AM	6/1/2026, 4:00 PM	8.000 mCi	false	\$0.00			
145747	Confirmed by Mfg.	PET Test Product1	Demo BioRx Pharm. (CMO) #2	Demo Hospital #1	853	5/30/2026, 11:44 AM	6/1/2026, 4:30 PM	8.000 mCi	false	\$0.00			

Lisbon Advantage: Clinical Trial Coordination

The Problem

- ❑ Patient orders are often tracked through emails and spreadsheets
- ❑ No one system has accounting, including cancellations and other logistical management scenarios

How Lisbon Helps

- ✓ Sponsors have real-time visibility to all the dose orders, shipped status, Study Name and Study
- ✓ Tracking for Study Name and Study ID

Orders

Columns Export Refresh

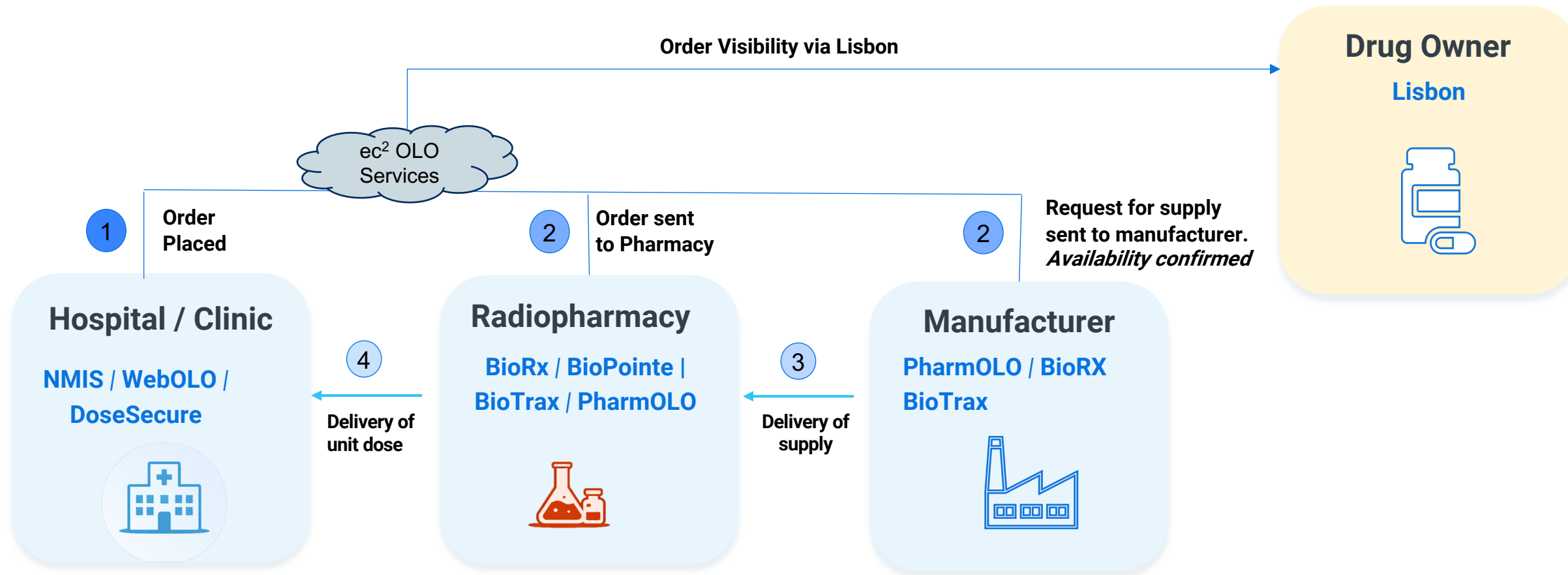
Filter by: Submitted Sunday, February 1, 2026 to Tuesday, June 16, 2026

R #	Status	Study ID	Study Name	Study Stage	Patient ID	Patient Age	Patient Weight	Product	Order #	Submitted At	Status (Approval)
145775	Confirmed by Mfg.	PET-TP1-TS1	Pet TP1 Test Study 1		987987	0		PET Test Product1	858	5/31/2026, 4:35 PM	Confirmed by Mfg.
145682	Confirmed by Mfg.	PET-TP1-TS1	Pet TP1 Test Study 1		123ABC	0		PET Test Product1	831	4/1/2026, 12:16 PM	Confirmed by Mfg.
	Online order submitted	PET-TP1-TS1	Pet TP1 Test Study 1		69846464	0		PET Test Product1	838	4/29/2026, 12:24 PM	Online order submit
	Online order submitted	PET-TP1-TS1	Pet TP1 Test Study 1		69846464	0		PET Test Product1	837	4/29/2026, 12:30 PM	Online order submit
145661	Confirmed by Mfg.	PET-TP1-TS1	Pet TP1 Test Study 1		AAA123123	0		PET Test Product1	826	2/18/2026, 11:23 AM	Confirmed by Mfg.
145815	Confirmed by Mfg.	PET-TP1-TS1	Pet TP1 Test Study 1		123456	0		PET Test Product1	877	6/15/2026, 12:24 PM	Confirmed by Mfg.
145662	Confirmed by Mfg.	PET-TP1-TS1	Pet TP1 Test Study 1		AAA111222	0		PET Test Product1	827	2/18/2026, 11:16 AM	Confirmed by Mfg.

7 total

Items per page: 50

ec² Software Ecosystem: Expanding to Theranostics



- Check supply capacity before confirming order
- Order to Manufacturer is automatically initiated, removing extra step from pharmacy.

Accurate & reliable hardware creates the physical foundation. Software connects the workflow around it.

Measure

*Dose Calibration,
spectroscopy, QA tools*



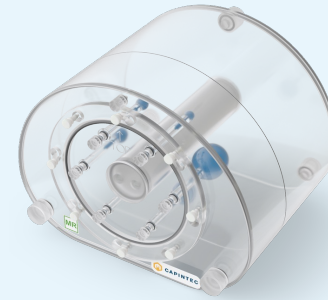
Protect

*Dosimetry, area monitoring,
shielding*



Handle & Support

*Shielding, hot lab furniture,
storage, waste*



What Connectivity Enables

- **Workflow visibility**

See key order, dose, inventory, and department activity in one workflow context

- **Traceability**

Track dose activity from order and receipt through administration and disposition

- **Operational efficiency**

Reduce duplicate entry and streamline routine department tasks

- **Compliance support**

Maintain centralized documentation for inspections and reporting

- **Scalability**

Support department growth, enterprise needs, and evolving radiopharmaceutical workflows

What other opportunities do you see?

Thank you

