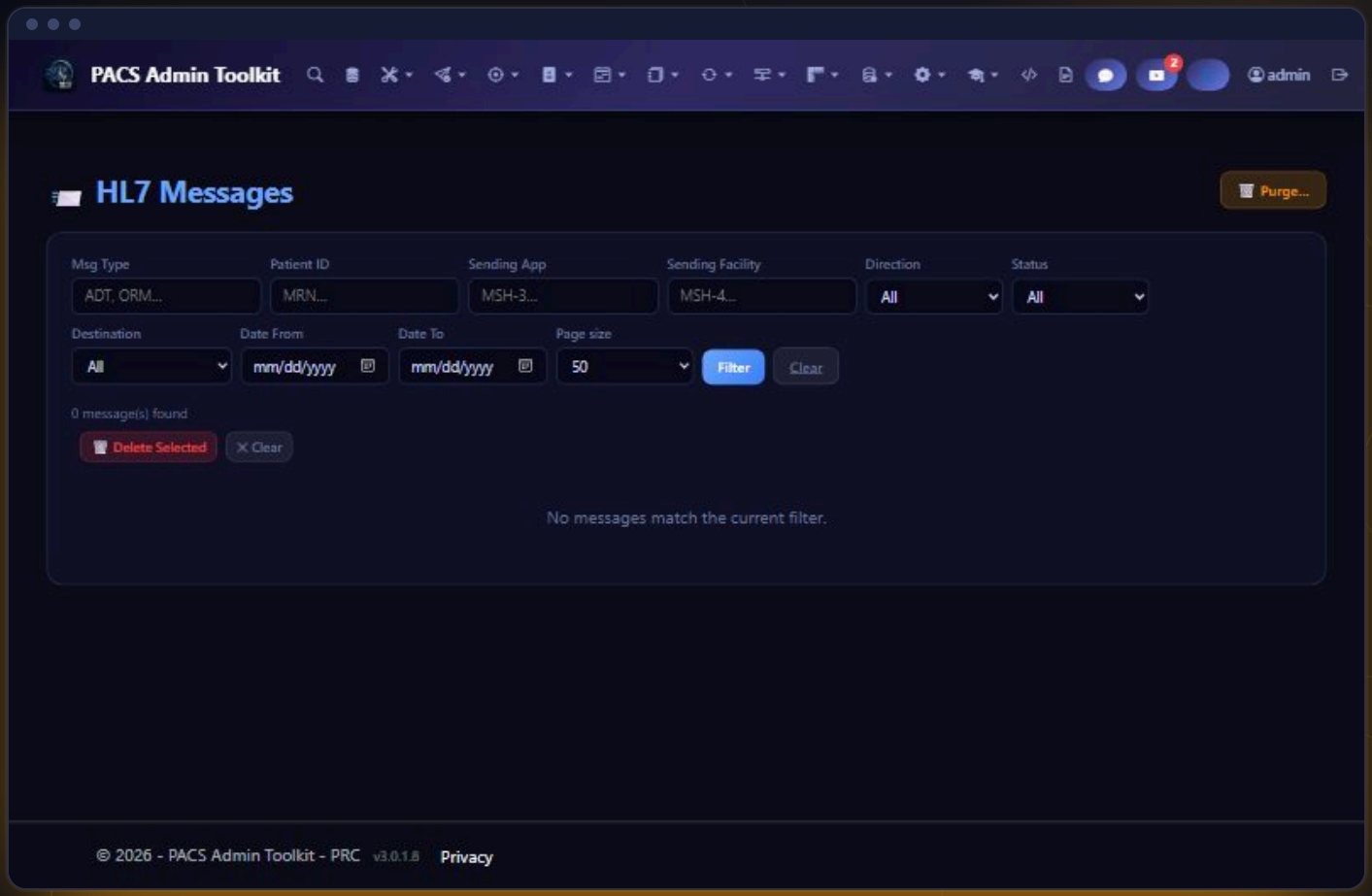
Platform & Integration

Leads with Truth

# HL7 Messaging

Receive, log, edit and deliver HL7 with retries, ACK checks and a searchable record.




MLLP listeners that store and acknowledge every HL7 message, and a delivery queue that retries until the receiver accepts. Field Editor rules fix messages on the way in or out, message templates check what each interface really sends, and every message can be searched, read and resent.

**Every**
inbound message stored, indexed and searchable

**AA only**
counts as sent unless you choose otherwise

**Per destination**
retries, threads, ACK rules and field edits

Replaces: **Interface engine channels built only for logging and delivery**

License module HL7

THE CHALLENGE

## Why it matters

When a result never reaches the RIS or an order never reaches radiology, the first question is always "did we send it, and what came back?" Too often the answer sits in an interface engine log that radiology cannot see, or nowhere at all.

Receivers go down overnight, reject a message for a missing field, or expect a different MSH-5. Without a queue that retries, a record of every attempt and a way to fix and resend, each of those becomes a manual hunt and a phone call.

IN SHORT

MLLP listeners that store and acknowledge every HL7 message, and a delivery queue that retries until the receiver accepts. Field Editor rules fix messages on the way in or out, message templates check what each interface really sends, and every message can be searched, read and resent.

CAPABILITIES

## What it does

- **Listeners that keep everything**
  MLLP listeners on any port store each message (any v2.x version), index its header, patient, visit and order fields, and answer with an ACK that echoes the sender.
- **Honest acknowledgements**
  AA only when the message parsed and was saved; AE with the reason when it did not, so the sender knows to keep it.
- **Type filters**
  Accept only the message types and triggers you want (ADT, ORM, ADT^A08); anything else is answered "ignored" so the sending engine never stalls.
- **A delivery queue that retries**
  Outbound messages are queued per destination with priorities, worker threads, retry counts and delays, and survive a restart.
- **ACK rules per receiver**
  Each destination decides what counts as delivered: AA only, AA or CA, any response, or fire and forget.
- **Field Editor rules**
  Fix fields and segments on inbound messages before they are stored, or on outbound messages just before they are sent: copy, set, pad, trim, split, find and replace, map codes, reformat dates, add or delete segments, each rule built from plain steps with optional conditions.

### Recipes, lookup tables and a live test

Start from ready-made rules (fill a missing MRN issuer, translate patient class, blank the SSN), translate codes through lookup tables of thousands of rows pasted from a spreadsheet, and see each step's result on a real message before a rule touches traffic.

### Message templates that check interfaces

Describe a message type from built-in ADT, ORM, OMI, ORU, SIU, MDM and DFT examples or from a real message, then paste messages to see missing required fields, wrong lengths, bad dates and unexpected segments.

### Listener safeguards

Limit each listener to known sender addresses and sending applications, cap message size and connections, and close idle connections, all set with plain fields and tips.

### Search, read and resend

Filter by type, patient ID, sending application, direction, status and date; read any message field by field; resend it to one or more destinations, edited if needed.

### Reprocess after an outage

Failed batches go back to the queue with retries reset, oldest first, with urgent ones set to Expedited.

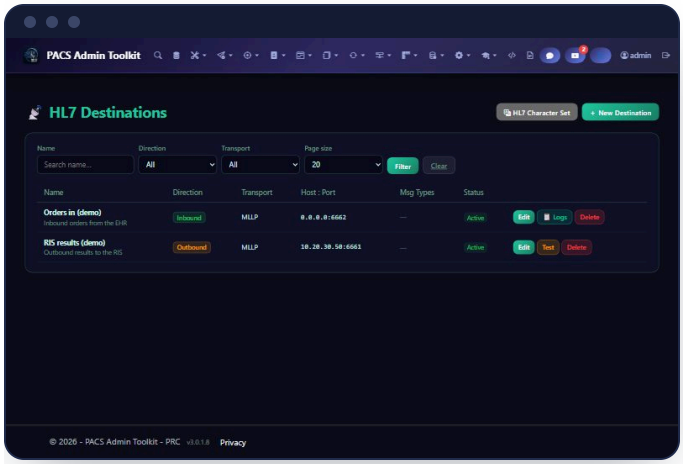
WORKFLOW

## How it works

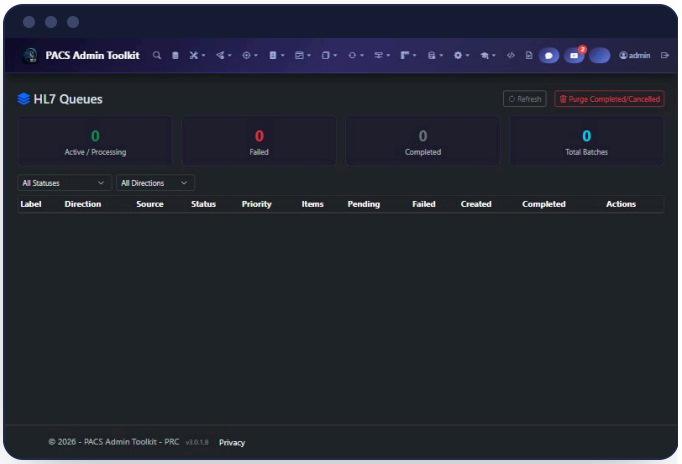
1. **Message arrives**
   The EHR, RIS or interface engine connects to a listener port over MLLP.
2. **Filtered and edited**
   The type filter and any assigned Field Editor rules apply.
3. **Stored and acknowledged**
   The message is parsed, indexed in HL7 Messages and answered AA or AE.
4. **Outbound queued**
   Messages built by DICOM to HL7 join the queue, one item per destination.
5. **Delivered and checked**
   Each item is sent over MLLP, the ACK is read, and it is marked Sent or retried.

IN THE PRODUCT

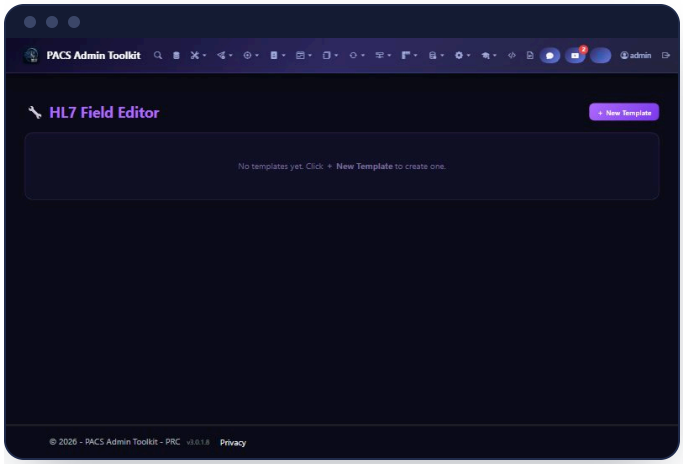
# See it in action



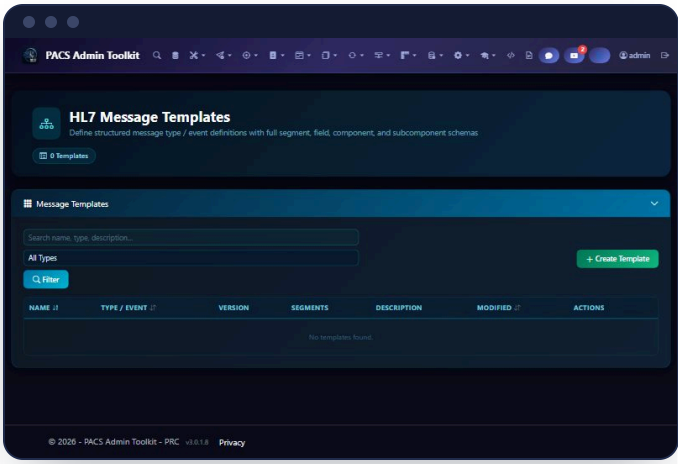

Listeners and senders, with ACK, retry and MSH settings




The delivery queue: priorities, retries and reprocess




Field Editor rules built step by step, tested on a real message before they go live




Message templates describe each interface and check its messages

USE CASES

# Where it pays off

## Radiology needs to see what the EHR sends

| | |
|---|---|
| CHALLENGE | Orders and patient updates go missing between the EHR and radiology, and only the interface team can look at the traffic. |
| WITH PATK | The interface engine adds a copy feed of ADT and ORM to a PATK listener; radiology IT searches by MRN and reads PID and PV1 field by field. |
| OUTCOME | **"Was it sent?" is answered in a minute by the people who asked, without a ticket to another team.** |

### Results receiver down overnight

| | |
|---|---|
| CHALLENGE | The RIS interface restarted at 2 a.m. and every result sent meanwhile failed. |
| WITH PATK | Failed batches stay in HL7 Queues with the reason; once the receiver is back, Reprocess sends them oldest first, urgent ones Expedited. |
| OUTCOME | **No results re-keyed and none lost; a longer retry delay rides out the next outage on its own.** |

### Two receivers, two conventions

| | |
|---|---|
| CHALLENGE | The RIS and the billing system want the same results with different MSH-5 values and a reformatted date. |
| WITH PATK | Each destination carries its own MSH settings and Field Editor template; each gets its own queue item and retries. |
| OUTCOME | **One feed serves both, and a failure at one receiver never holds up the other.** |

3T

## Trust · Truth · Transform

### Trust

Messages are kept before they are acknowledged, the queue survives restarts, and a scheduled or in-flight item is never sent twice; purges need Delete and Purge permissions.

### Truth

Every message, ACK, send attempt and error is recorded and searchable, with each listener's live log beside it.

### Transform

Fixing a field, re-pointing a receiver or replaying an outage takes minutes in the browser instead of an interface change request.

VALUE MODEL

# What it can be worth

An example radiology department that today relies on an interface team for HL7 visibility and redelivery.

| | |
|---|---|
| HL7 questions investigated per month ("was it sent, what came back") | 30 |
| Time saved per investigation with a searchable log | 30 minutes |
| Receiver outages per year | 6 |
| Messages to re-send or re-key by hand per outage | 200 at 3 minutes each |
| Blended IT / interface analyst cost per hour | $60 |
| Avoided interface engine channel licensing or build for logging and delivery | $10,000 |

**$24,400**

Estimated yearly value

Illustrative example. Your volumes, staffing and costs will differ; we will build this model with your own numbers.

DIFFERENTIATORS

# Why it stands out

**Built for the radiology team**
The log, queue and resend live in the same product as routing and worklist, not in an interface engine only the integration team can open.

**Delivery you can prove**
Each attempt, ACK code and error is kept with the message, which simple MLLP senders and scripts do not record.

**Edits without code**
Field Editor rules and lookup tables replace one-off scripts and are tested step by step on a real message before they touch traffic.

**Multi-site aware**
With Access Topology, each user sees only their units' messages and a destination can accept only its own unit's data.

SPECIFICATIONS

# At a glance

| | |
|---|---|
| **Standards** | HL7 v2.x over MLLP, with ACK (AA / AE / AR, enhanced CA / CE / CR) |
| **Inbound** | Listeners on any port, message type filter, allowed senders and applications, size / connection / idle limits, store and ACK switches |
| **Outbound** | Queue with priorities, worker threads, retries, retry delay, connect and ACK timeouts, accept mode, MSH fill or overwrite |
| **Tools** | Field Editor templates with recipes and lookup tables, message templates with a message checker, Test Connection, Resend, live listener logs |
| **Housekeeping** | Purge by status and age, purge completed / cancelled batches, UTF-8 or ASCII character set |

## See HL7 Messaging with your own data

Ask for a guided demo or a trial license. PACS Admin Toolkit installs on your own Windows server in under an hour, and every module comes with step-by-step guides and in-app guided tours.

sales@3tconsults.com | support@3tconsults.com | +1 (612) 564-9194 | www.3tconsults.com

---

**Not a medical device.** PACS Admin Toolkit is not FDA-cleared or CE-marked and is not intended for primary diagnosis. It manages imaging and reporting data and workflows around the clinical systems that do.

Other product and company names may be trademarks of their respective owners. Screenshots show sample data. Value models are illustrative estimates, not guarantees. © 2026 3T Consults and Coaching.