How does the OA Switchboard router work?

OA Switchboard router

- **Routing via auto-cc**

- **Consortia routing**

OA Switchboard router

- **Routing via auto-cc**

- **Consortia routing**

OA Switchboard Updates Core Router
21 February 2023

Publisher sends P1-message to institution*) of first author's first affiliation

Publisher → Sending a P1-message → **OA Switchboard (Message hub)** → Relaying the P1-message → **Institution 1.1**

*) The ROR id is required, otherwise the message can't be sent.

If the ROR id is available, but that institution is not a 'participant' (so, hasn't signed the Service Agreement, and doesn't have an account in OA Switchboard yet), there are two options:
- OA Switchboard knows the institution as 'organisation', and the message will get the status 'undelivered', OR
- OA Switchboard doesn't know the institution as 'organisation', and the message ends up in the Dead Letter Queue (DLQ)

2022 ROUTING VIA AUTO-CC

The OA Switchboard auto-cc feature sends a PIO (Public Information Only) version of that P1-message to the second author's first affiliation*)

Publisher

Sending a
P1-message

OA
Switchboard
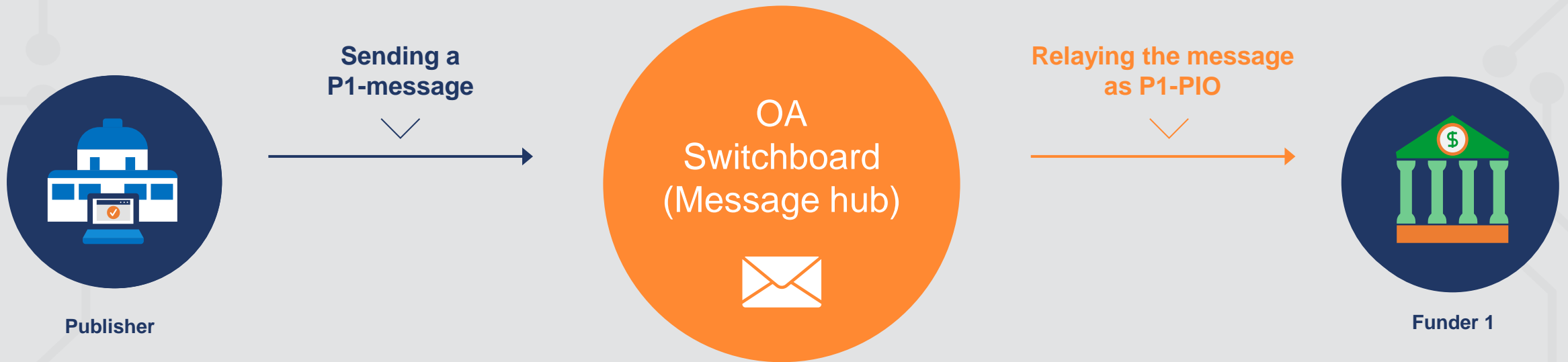(Message hub)

Relaying the message
as P1-PIO

Institution 2.1

*) Provided the publisher has 'auto-CC' switched on AND
the publisher provided a ROR id in the original P1-message for the affiliation of the second author

The OA Switchboard auto-cc feature sends a PIO (Public Information Only) version of that P1-message to the nth author's first affiliation*)

Publisher → Sending a P1-message → **OA Switchboard (Message hub)** → Relaying the message as P1-PIO → **Institution n.1**

*) Provided the publisher has 'auto-CC' switched on AND
the publisher provided a ROR id in the original P1-message for the affiliation of the nth author
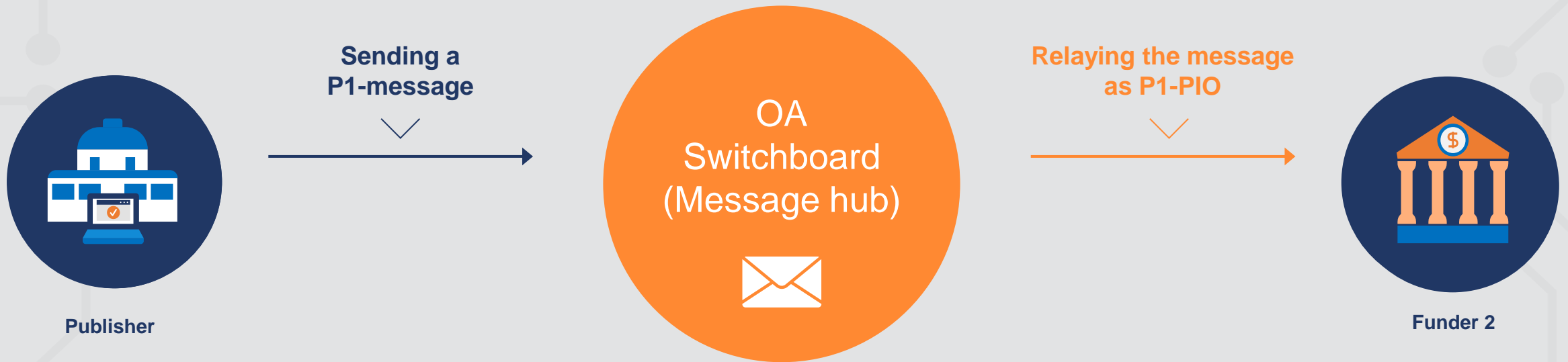
The OA Switchboard auto-cc feature sends a PIO (Public Information Only) version of that P1-message to the first research funder**)

Sending a
P1-message

OA
Switchboard
(Message hub)

Relaying the message
as P1-PIO

Publisher

Funder 1

**) Provided the publisher has 'auto-CC' switched on AND
the publisher provided a ROR id in the original P1-message for the first research funder

The OA Switchboard auto-cc feature sends a PIO (Public Information Only) version of that P1-message to the second research funder**)

Publisher

Sending a P1-message

OA Switchboard (Message hub)

Relaying the message as P1-PIO

Funder 2

**) Provided the publisher has 'auto-CC' switched on AND
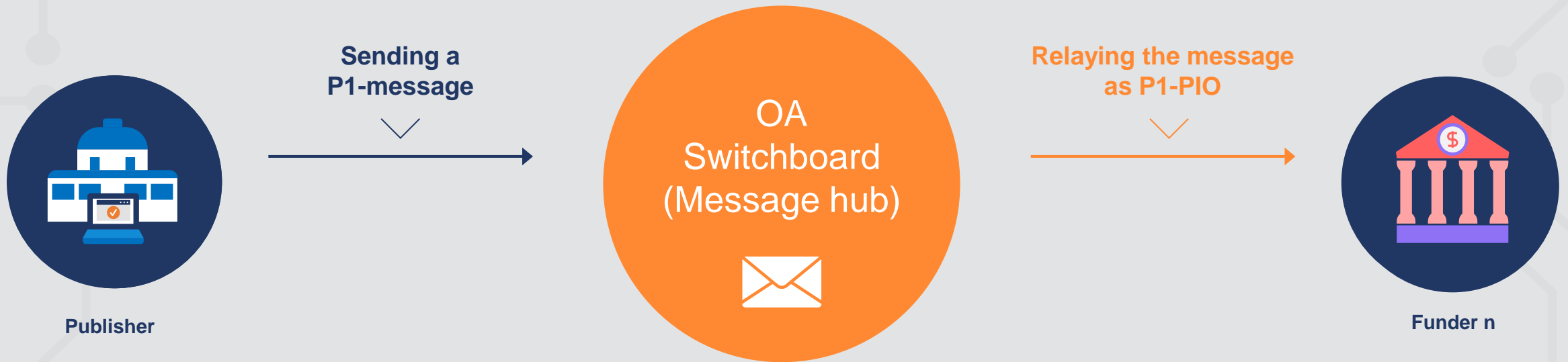the publisher provided a ROR id in the original P1-message for the second research funder

The OA Switchboard auto-cc feature sends a PIO (Public Information Only) version of that P1-message to the nth research funder**)

Sending a
P1-message

OA
Switchboard
(Message hub)

Relaying the message
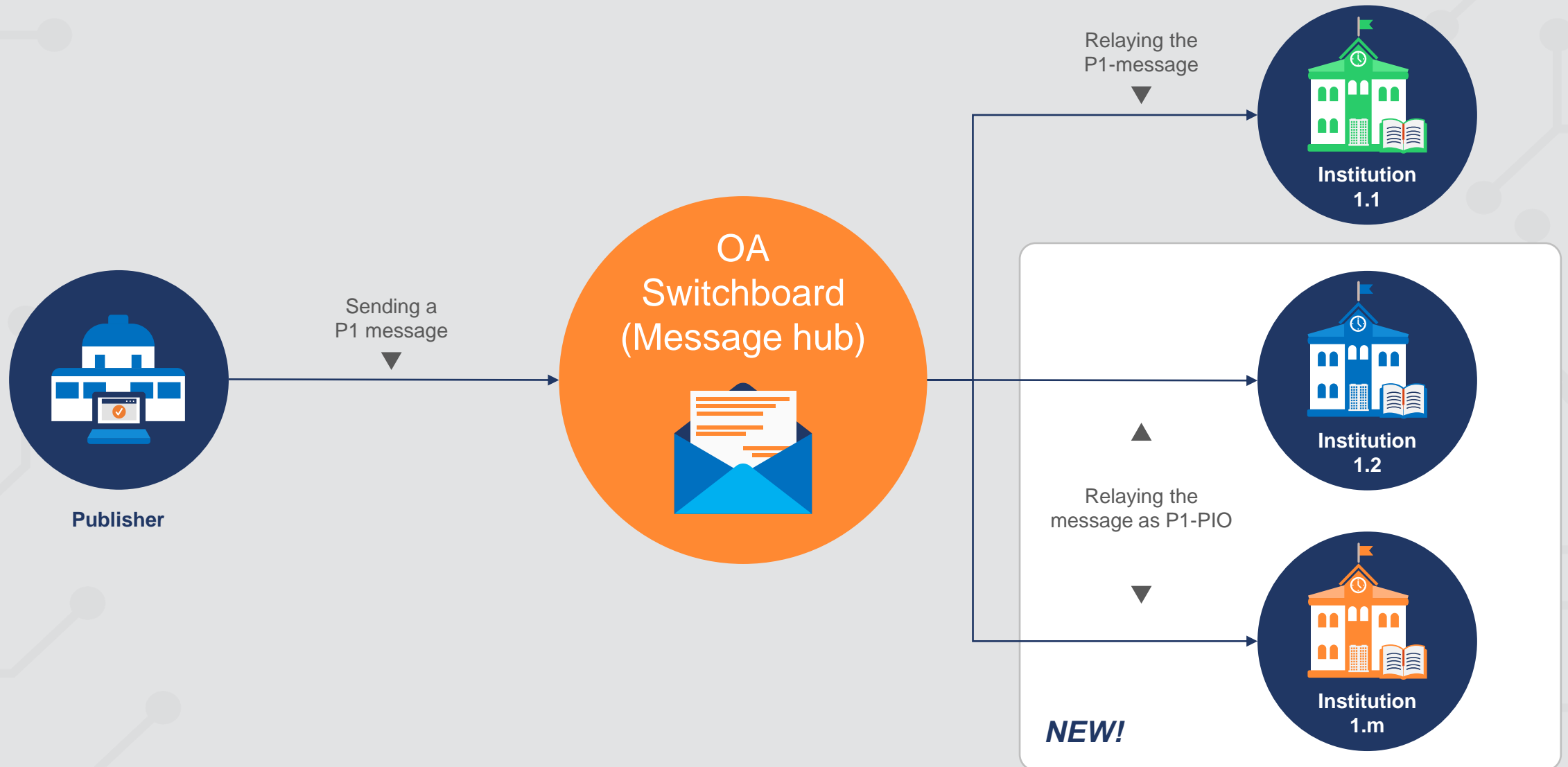as P1-PIO

Publisher

Funder n

**) Provided the publisher has 'auto-CC' switched on AND
the publisher provided a ROR id in the original P1-message for the nth research funder

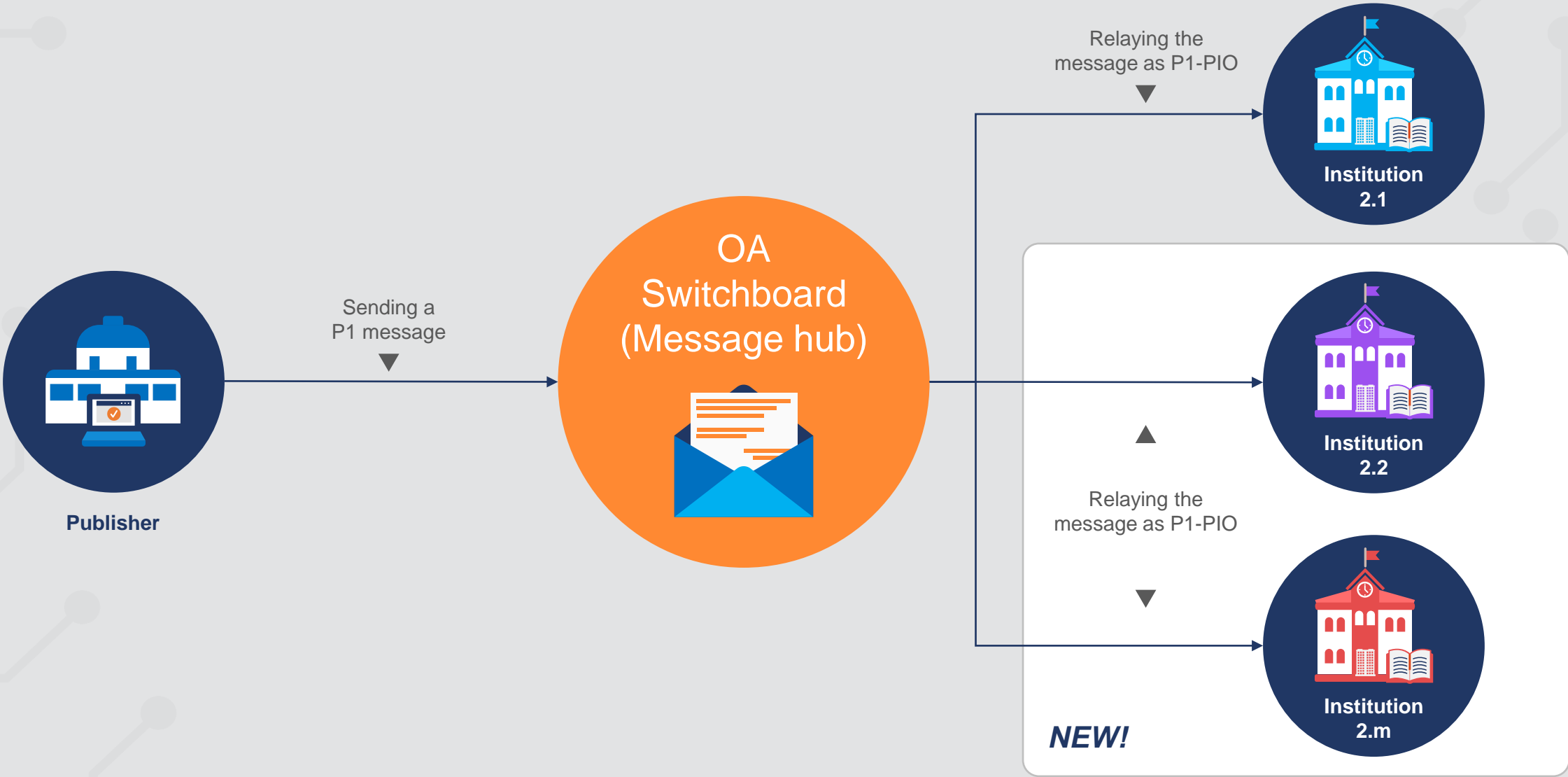# *CORE ROUTER UPDATE* (February 2023)

ROUTING VIA AUTO-CC
--- NEW! ---

Publisher sends P1-message to institution of first author's first affiliation, the updated OA Switchboard auto-cc feature sends a PIO (Public Information Only) version of that P1-message now also to the first author's second to mth affiliation

Publisher

Sending a P1 message

OA Switchboard (Message hub)

Relaying the P1-message

Institution 1.1

Relaying the message as P1-PIO

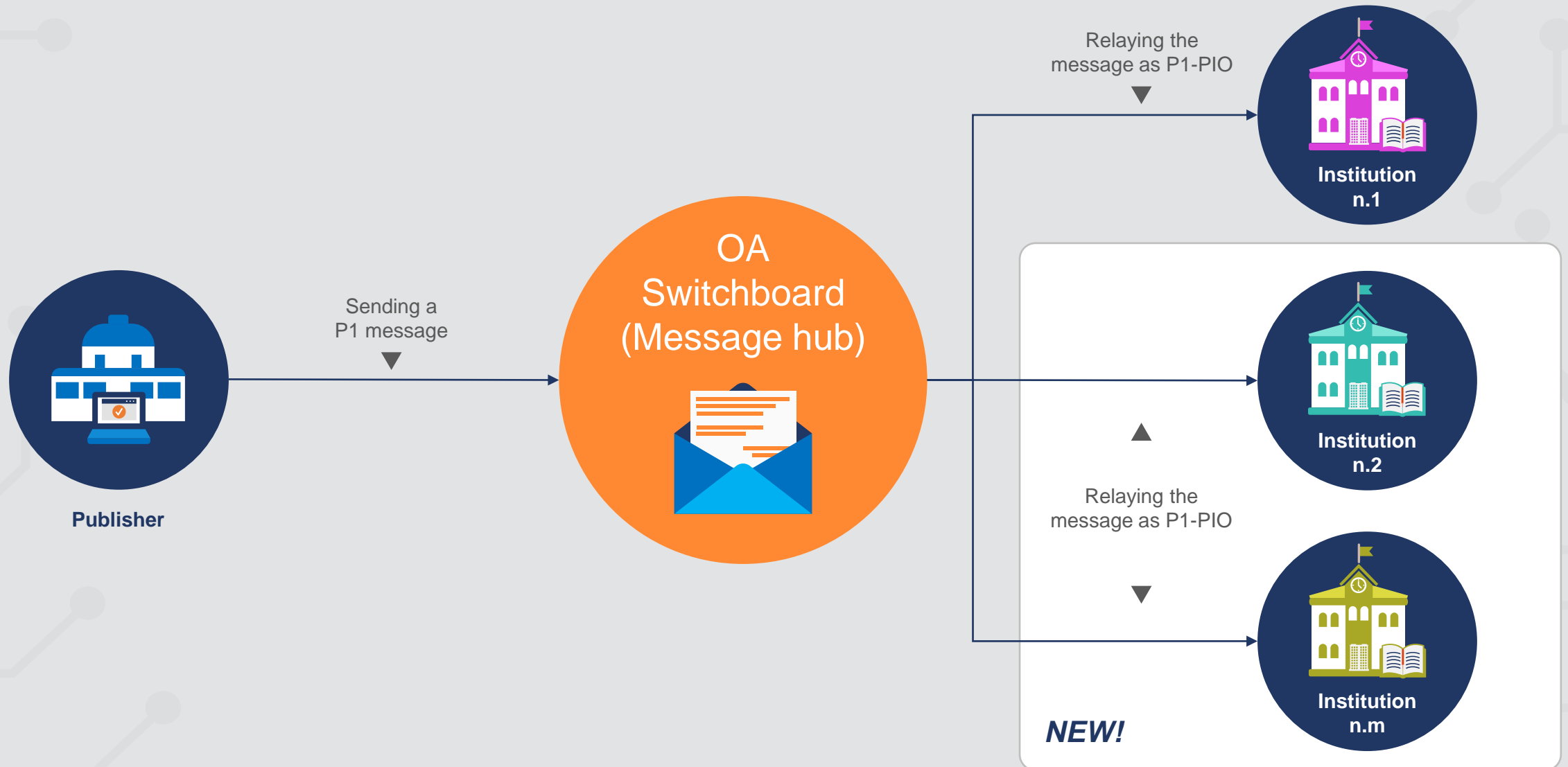Institution 1.2

NEW!

Institution 1.m

Publisher sends P1-message to institution of first author's first affiliation, the updated OA Switchboard auto-cc feature sends a PIO (Public Information Only) version of that P1-message now also to the second author's second to mth affiliation

Relaying the message as P1-PIO

Institution 2.1

OA Switchboard (Message hub)

Sending a P1 message

Publisher

Institution 2.2

Relaying the message as P1-PIO
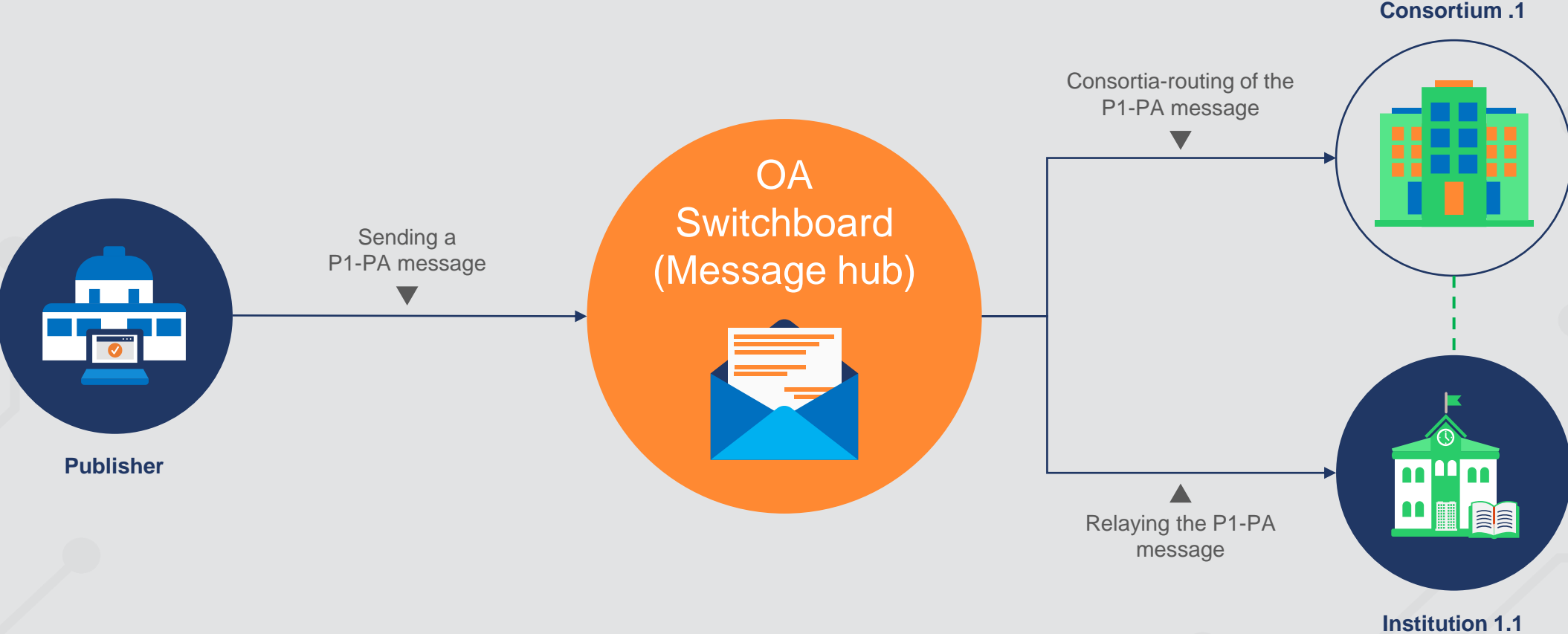
Institution 2.m

NEW!

Publisher sends P1-message to institution of first author's first affiliation, the updated OA Switchboard auto-cc feature sends a PIO (Public Information Only) version of that P1-message now also to the nth author's second to mth affiliation

Relaying the message as P1-PIO

Institution n.1

Sending a P1 message

OA Switchboard (Message hub)

Publisher

Institution n.2

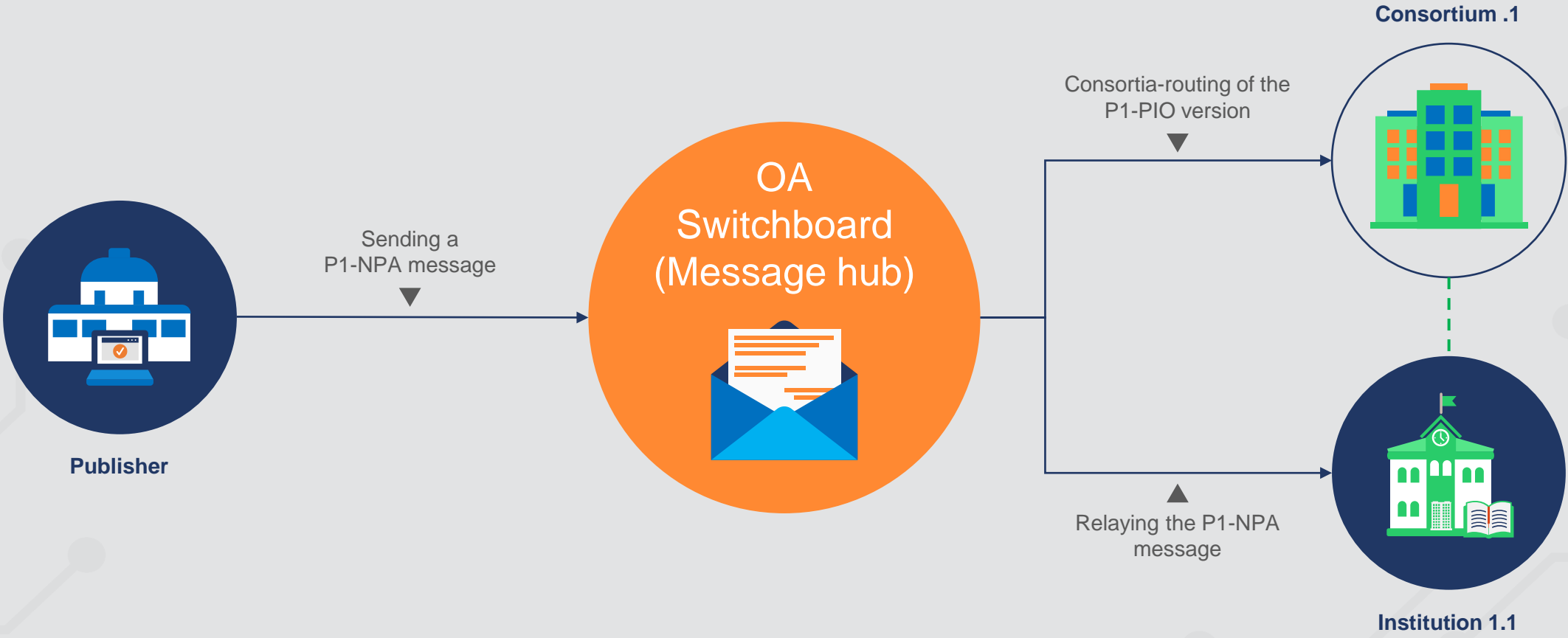Relaying the message as P1-PIO

Institution n.m

NEW!

2022 CONSORTIA ROUTING

Publisher sends 'Prior Agreement' (PA) P1-message to institution of first author's first affiliation, OA Switchboard delivers the same to consortium

Consortium .1

Consortia-routing of the P1-PA message

OA Switchboard (Message hub)

Sending a P1-PA message

Publisher

Relaying the P1-PA message

Institution 1.1

Publisher sends 'No-Prior-Agreement' (NPA) P1-message to institution of first author's first affiliation, OA Switchboard delivers a P1-PIO version of that P1-message to consortium

Consortium .1

Consortia-routing of the
P1-PIO version

OA
Switchboard
(Message hub)

Sending a
P1-NPA message

Publisher

Relaying the P1-NPA
message

Institution 1.1

Publisher sends P1-PIO message to institution of first author's first affiliation, OA Switchboard delivers the same to consortium

Publisher

Sending a
P1-PIO message

OA
Switchboard
(Message hub)

Consortia-routing of the
P1-PIO message

Consortium .1

Relaying the P1-PIO
message

Institution 1.1

CORE ROUTER UPDATE (February 2023)

CONSORTIA ROUTING
--- NEW! ---

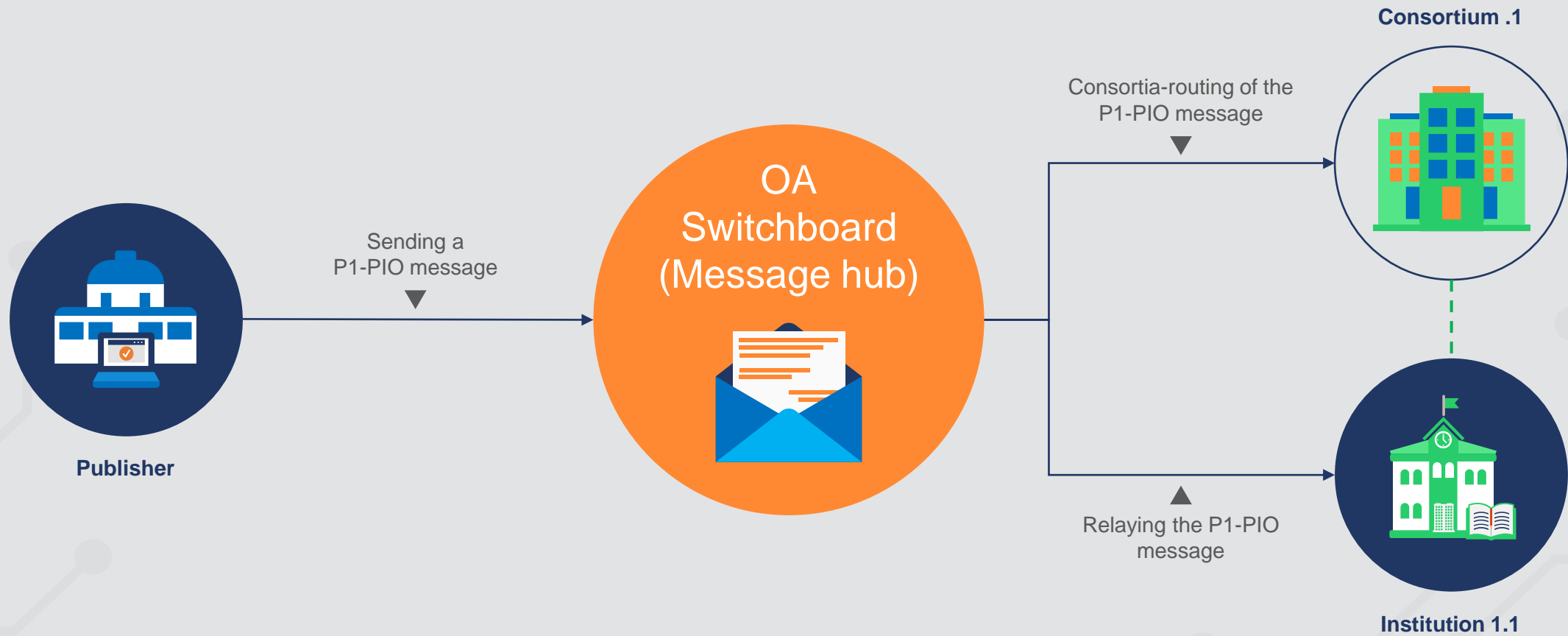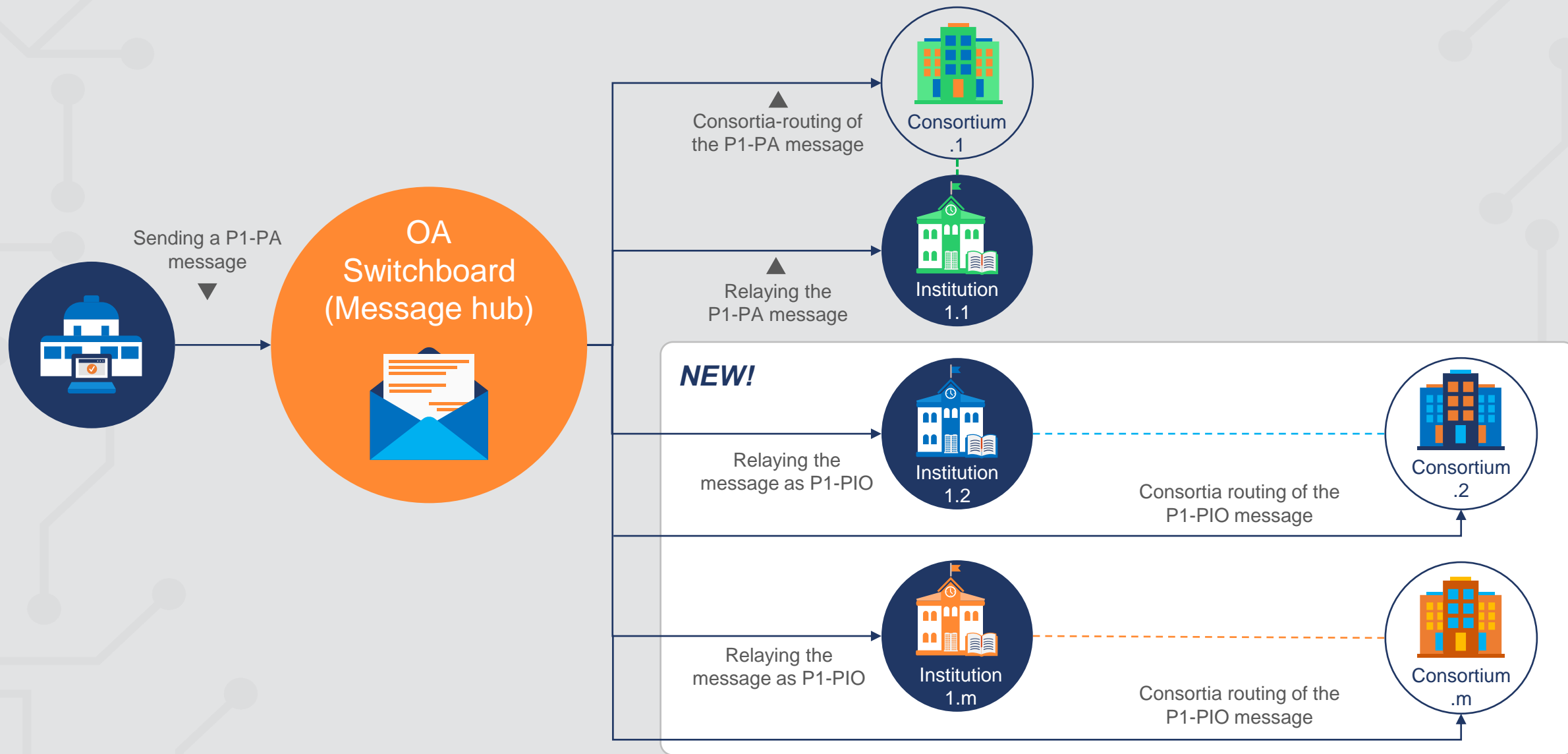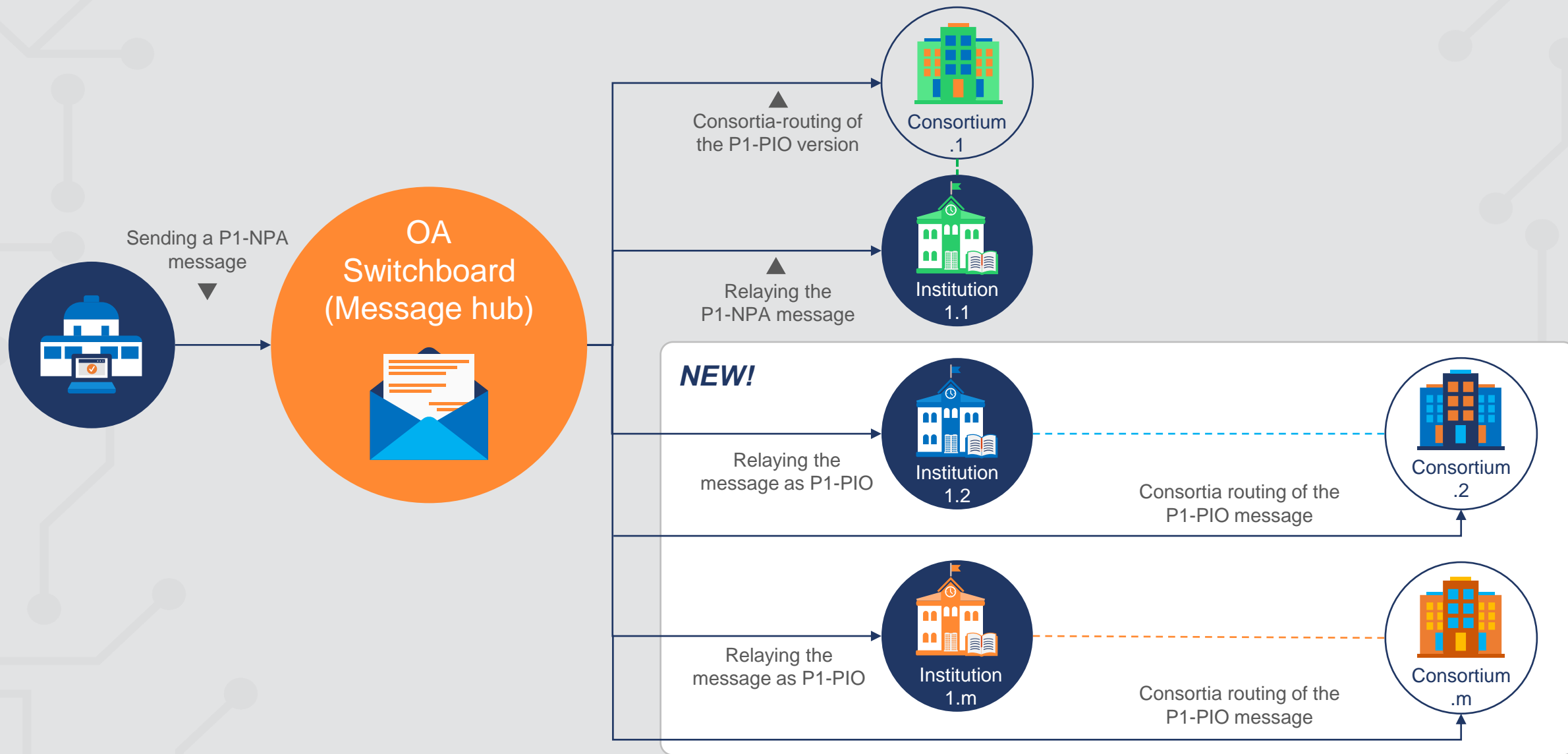**Publisher sends 'Prior Agreement' (PA) P1-message to institution of first author's first affiliation, OA Switchboard delivers the same to consortium, and the updated OA Switchboard consortia routing now also delivers a P1-PIO version of that message to consortia related to the second to mth affiliation of the first author**

Sending a P1-PA message

OA Switchboard (Message hub)

Consortia-routing of the P1-PA message

Consortium .1

Relaying the P1-PA message

Institution 1.1

NEW!

Relaying the message as P1-PIO

Institution 1.2

Consortia routing of the P1-PIO message

Consortium .2

Relaying the message as P1-PIO

Institution 1.m
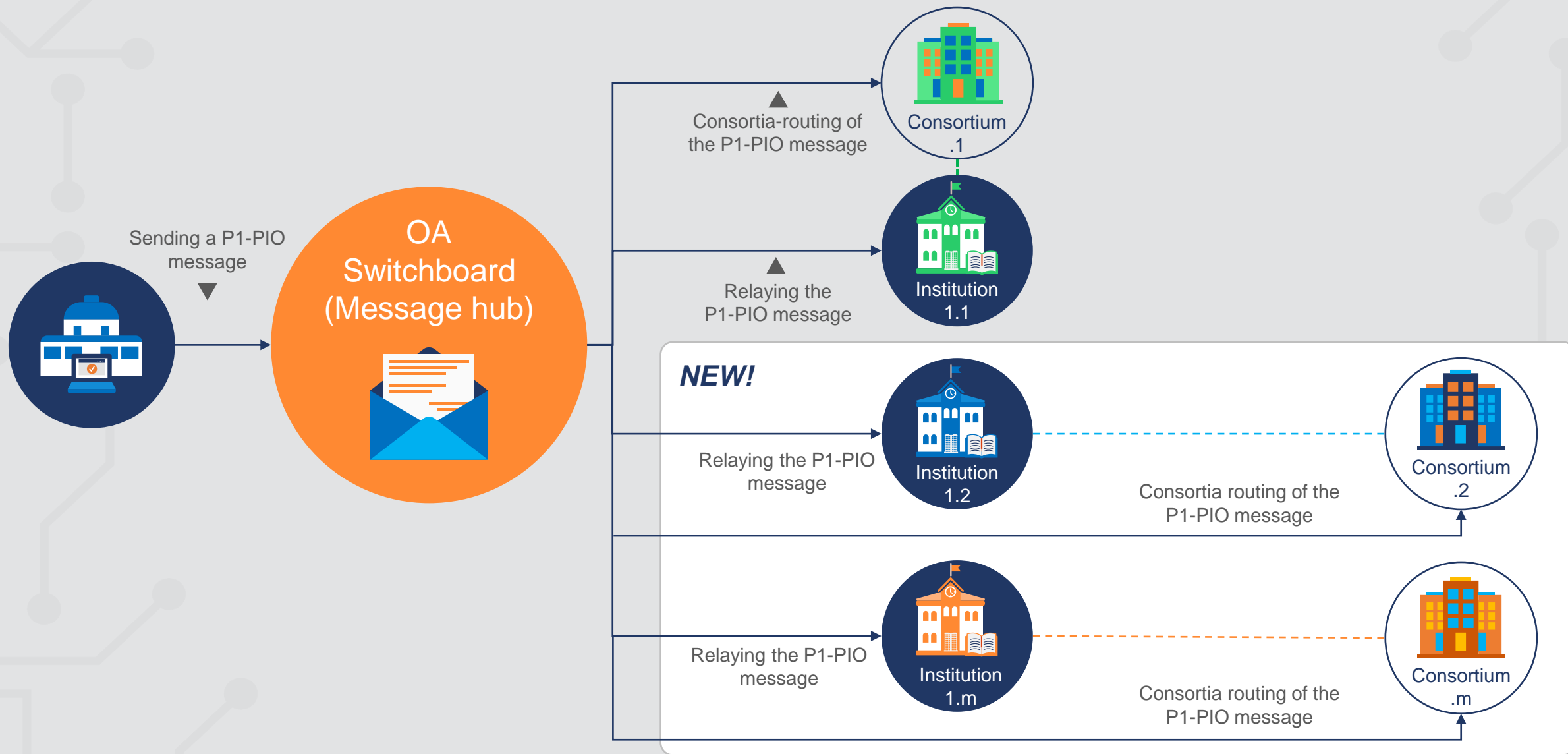
Consortia routing of the P1-PIO message

Consortium .m

Publisher sends 'No-Prior-Agreement' (NPA) P1-message to institution of first author's first affiliation, OA Switchboard delivers the same to consortium, and the updated OA Switchboard consortia routing now also delivers a P1-PIO version of that message to consortia related to the second to m[th] affiliation of the first author

Sending a P1-NPA message

OA Switchboard (Message hub)

Consortia-routing of the P1-PIO version

Consortium .1

Relaying the P1-NPA message

Institution 1.1

NEW!

Relaying the message as P1-PIO

Institution 1.2

Consortia routing of the P1-PIO message

Consortium .2

Relaying the message as P1-PIO

Institution 1.m

Consortia routing of the P1-PIO message

Consortium .m

Publisher sends P1-PIO message to institution of first author's first affiliation, OA Switchboard delivers the same to consortium, and the updated OA Switchboard consortia routing now also delivers this P1-PIO message to consortia related to the second to mth affiliation of the first author

Sending a P1-PIO message

OA Switchboard (Message hub)

Consortia-routing of the P1-PIO message

Consortium .1

Relaying the P1-PIO message

Institution 1.1

NEW!

Relaying the P1-PIO message

Institution 1.2

Consortia routing of the P1-PIO message

Consortium .2

Relaying the P1-PIO message

Institution 1.m

Consortia routing of the P1-PIO message

Consortium .m

This consortia routing of P1-PIO messages also works for the first to m^{th} affiliation of the second to n^{th} author
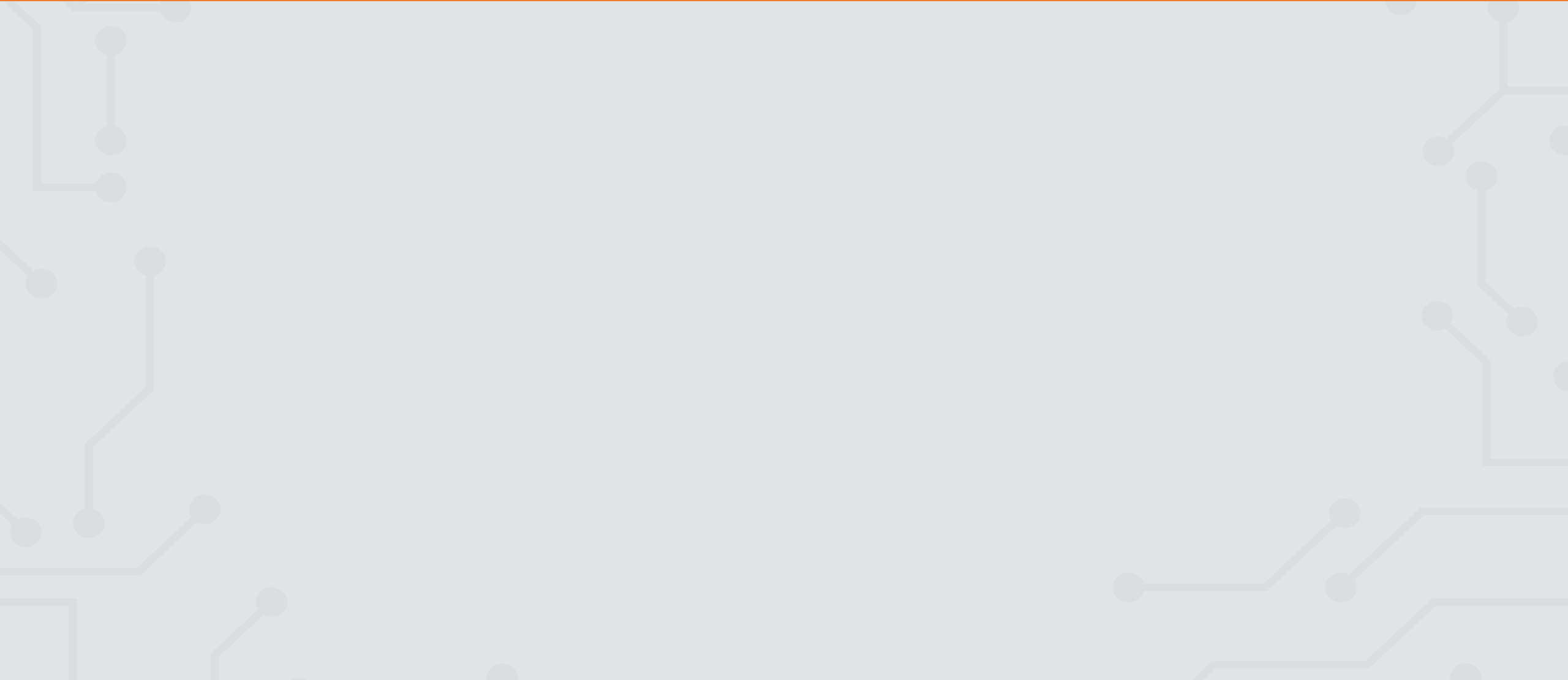
APPENDIX: CONTEXT

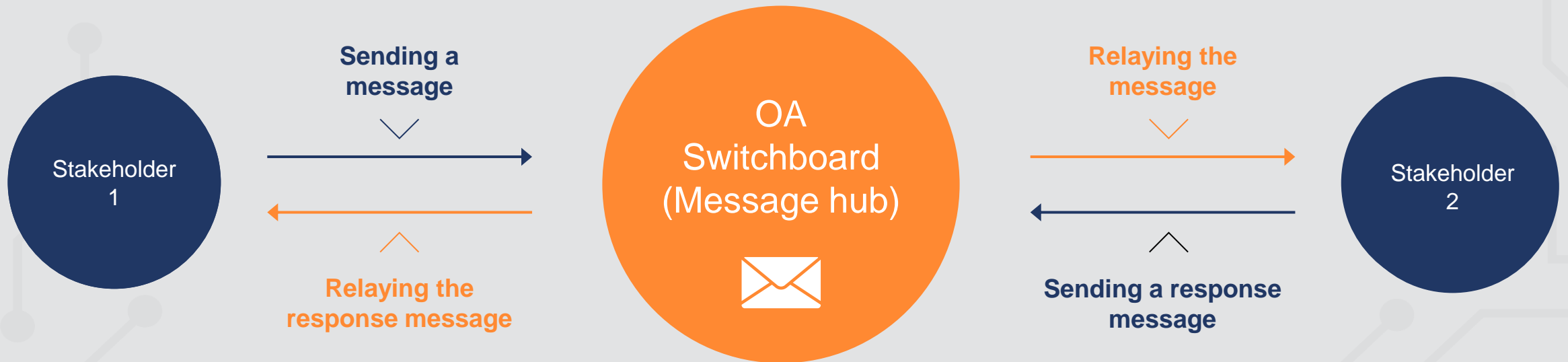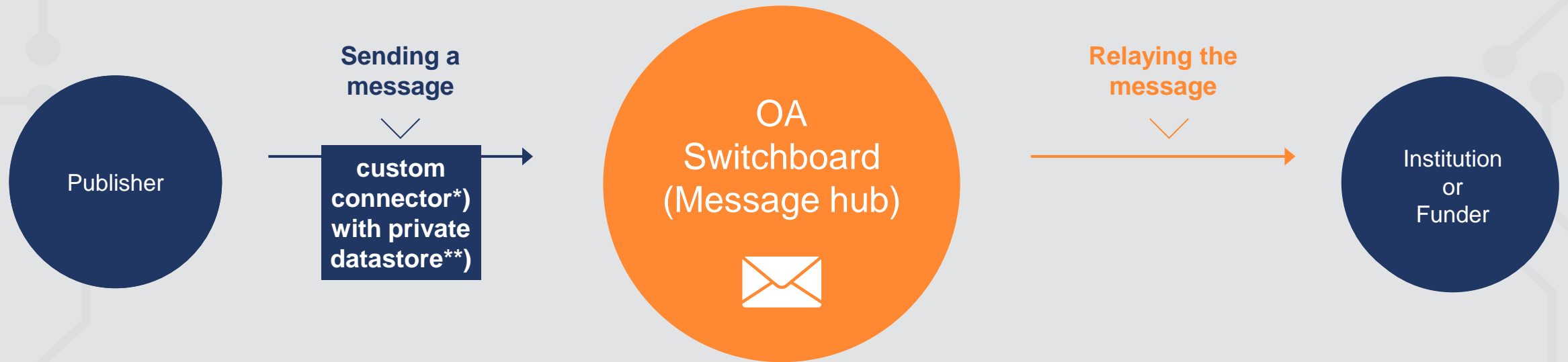# USE CASE 1: Publication notification and reporting
Current set-up for most OA Switchboard publishers

Publisher

Sending a message

custom connector*) with private datastore)**

OA Switchboard (Message hub)

Relaying the message

Institution or Funder

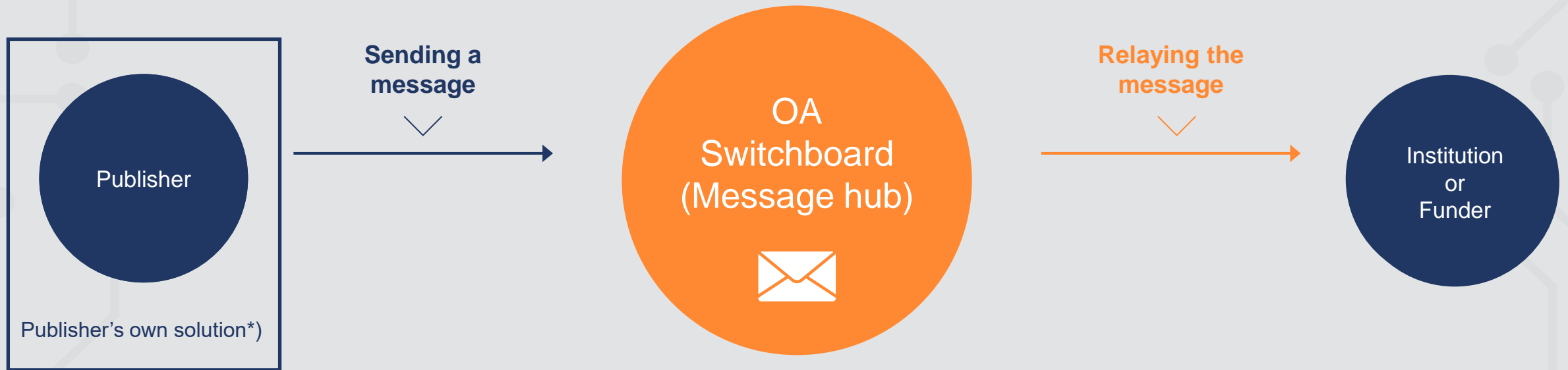*) Often including the 'smart matching' module to obtain ROR id's (on author affiliations and research funders) from:
- Free text (via ROR API)
- Ringgold id (based on publisher's Ringgold license, if in place)
- ORCID id (via ORCID API)

**) Sometimes including a UI ('publication tracker') for management information

Sending a message

Publisher

Publisher's own solution*)

OA Switchboard (Message hub)

Relaying the message

Institution or Funder

*) Publishers, connecting to the OA Switchboard API directly, have the option to first make use of the 'suggester' function**) of the OA Switchboard, before determining a ROR id for the 'send-to'. They can obtain ROR id's (on author affiliations and research funders) from:
- Free text (via ROR API)
- Ringgold id (based on publisher's Ringgold license, if in place)
- ORCID id (via ORCID API)

**) Also (with free text to ROR id via the ROR API only) available in the OA Switchboard UI, for those publishers composing messages manually.

APPENDIX: *CORE ROUTER UPDATE*

UPDATED (RELEVANT ONLY) SLIDES
AS USED IN MESSAGE STRUCTURE WORKING GROUP MEETING (6 FEBRUARY 2023)

Message lifecycle

API

Validation

Queue

Router

AWS Step Functions
Per message workflow

Amazon API Gateway

Internet

UI

hub.oaswitchboard.org/dashboard/messages

oaswitchboard

MESSAGES   DLQ MESSAGES   COMPOSE MESSAGE ⌄   EXPORT

Notifications

Store

PostgreSQL

{ api }

Amazon VPC
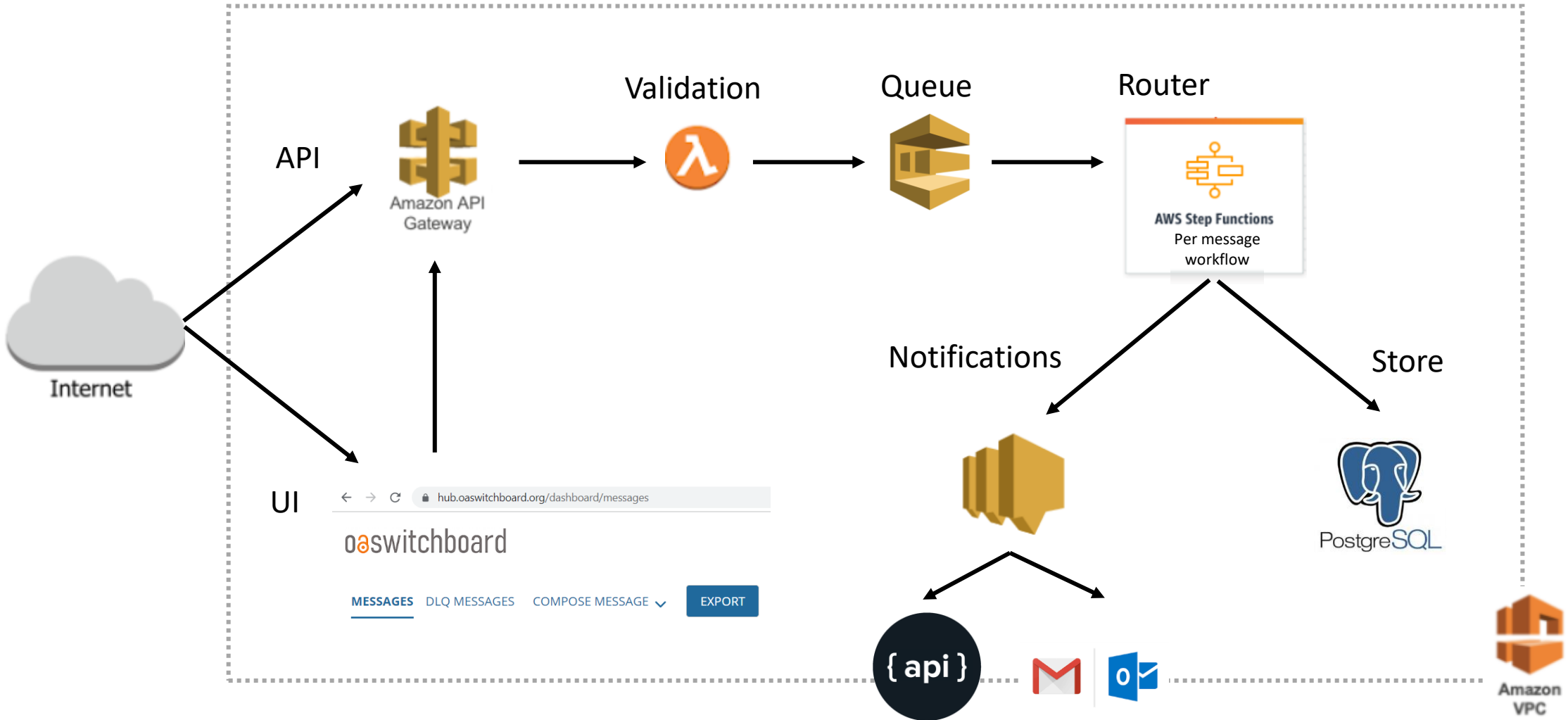
Router per message workflow

The router workflow consists of 2x3 steps

1x SENDTO →

Receiver discovery

Receiver expansion

If feature enabled: Auto CC, dedup receivers
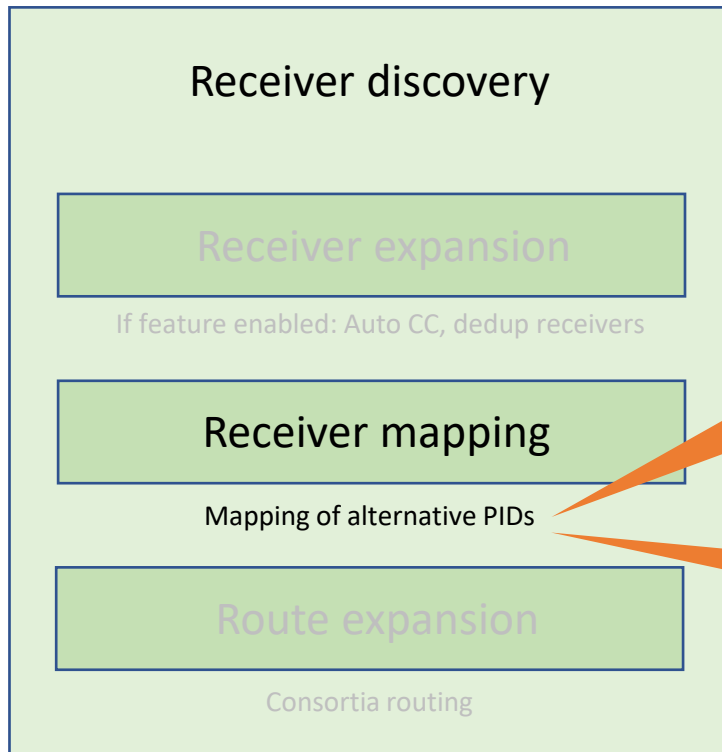
Receiver mapping

Mapping of alternative PIDs

Route expansion

Consortia routing

- Msg#=1, extraction=**sendto**, rules=**primary**, route=**default**, notification=email
- Msg#=2, extraction=**institutions**, rules=**cc**, route=**default**, notification=webhook+email
- Msg#=3, extraction=**institutions**, rules=**cc**, route=**consortia**, notifications=none
- Msg#=4, extraction=**institutions**, rules=**dlq**
- Msg#=5, extraction=**funders**, rules=**cc**, route=**default**

Route processing

Message pre-formatting

Add routing data to header, create Group ID

Message persistence

Store message (header) data, create ID per message

Message delivery

Receiver and Sender Notification(s)

email →
→
→
→
webhook(s)

sender notification →

What happens in step 2?

What does 'mapping of alternative PIDs' mean?

Receiver discovery

> **Receiver expansion**
>
> If feature enabled: Auto CC, dedup receivers

> **Receiver mapping**
>
> Mapping of alternative PIDs

> **Route expansion**
>
> Consortia routing

If author affiliation in P1-message includes:
- <u>Free text only</u>: It is not mapped to anything (that affiliation doesn't receive a P1)
- <u>Ringgold id</u>: It is not mapped to anything (that affiliation doesn't receive a P1)
- <u>ISNI</u>: It is mapped to a ROR id, but only for organisations known in OA Switchboard. The P1-message (PIO) is sent to that affiliation.

If research funder in P1-message includes:
- <u>Free text only</u>: It is not mapped to anything (that funder doesn't receive a P1)
- <u>Fundref id</u>: It is mapped to ROR id, but only for organisations known in OA Switchboard. The P1-message (PIO) is sent to that research funder.