



**Canada Health Infoway**

# **CA:eReC Working Group**

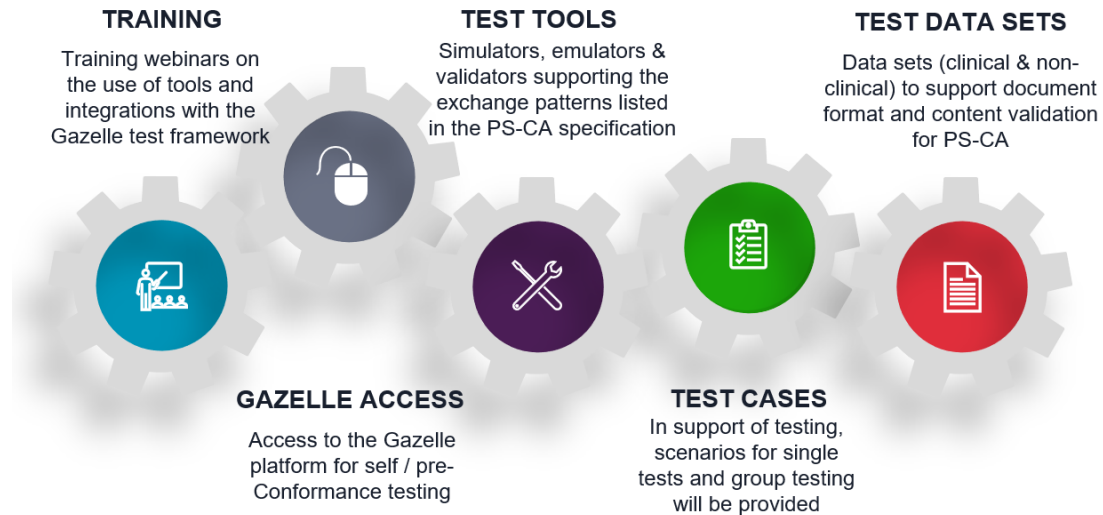
Online meeting  
March 13, 2024

# Topics

Topic	Time
Supporting Industry-Wide Testing, Compliance and Conformance – Mark	10 min
Current MustSupport working definition & proposed application - Russ	
Constructing (Slimmer) Message Bundles - Jean	10 min
Relaxing MustSupport Requirements in Profiles - Jean	30 min
Upcoming meetings / next steps - Mark	5 min

# Industry-Wide Testing, Compliance and Conformance

- Shared Pan-Canadian Interoperability Roadmap Building Block
- Self-testing and conformance events to bring together vendors to demonstrate live interoperability of solutions



# Current Must Support Working Definition

## Sender:

- Elements marked with the "MustSupport" flag **SHALL** be populated as specified within the profile they belong to.
- Elements without the "MustSupport" flag **SHOULD** still be populated, however carry no expectations in the Implementation guide.

## Receiver:

- Receivers **SHALL** be capable of processing resource instances containing data elements populated with the "MustSupport" flag without generating an error or causing the application to fail. Elements without a "MustSupport" flag in a FHIR response **SHOULD** still be received without generating an error or causing the application to fail.
- The receiver **SHOULD** be capable of displaying "MustSupport" data elements for human use or processing (including, storing them) for multiple events.

# Applying Must Support to profiles

- The MustSupport flag is seen as a conformance tool:
    - In FHIR R4, all we have is MustSupport and narrative
    - In RHIR R5 and beyond, the Obligations framework will allow us to be more fine-grained in our conformance statements.
  - This means that :
    - **only** elements that a sender **SHALL** be able to demonstrate the ability to send to pass a conformance test should be marked as MustSupport in the profiles
    - other elements that **are important** for implementers to be aware of / handle should be readily visible to implementers and appropriately modeled with bindings, cardinality, etc.
- ... adding models and comments to important elements will make them visible on the differential view of the profile in the FHIR IG (example: [Patient \(CA:eReC\)](#) )

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# Constructing (Slimmer) Message Bundles

- 4 main Message Bundles for:
  - sending a ServiceRequest
  - sending a (process request) Task
  - sending an Appointment
  - sending clinician to clinician Communication
- a ServiceRequest sent to an eReC Receiver contains information that may not be stored (e.g. multiple representations of form data)
- today, in the Ontario spec, there's a requirement to include the ServiceRequest in all messages
- there's are concerns about receivers being able to return the information received (as well as the need to)

# Constructing Message Bundles - Requirements

## FHIR

In FHIR messaging, a "message" is sent from a source application to a destination application when an event happens. Events mostly correspond to things that happen in the real-world.

Messages are **Bundle** resources, with the following rules:

- The Bundle **type** SHALL be **message**
- The first resource in the bundle SHALL be a **MessageHeader** resource
- If the **MessageHeader.focus** or **MessageHeader.response.details** refer to any resources, they SHALL be included in the Bundle entries
- The bundle MAY also contain additional resources that these other resources refer to. It SHOULD include all resources needed for the receiver to be able to process the message as expected by the MessageHeader.event (this can be defined by a **MessageDefinition** resource)
- The bundle SHALL NOT include resources that do have references (by **Reference** or **canonical** links) to the **MessageHeader**

## Ontario eReferral






### Constructing Messages

Transmission of information between two systems using **FHIR messaging** involves the exchange of a message payload that consists of several parts:

- **A Message Bundle:** A **Bundle** Resource ( "type" : "message" ) is used to package together a collection of FHIR Resource instances that will be sent from one system to another. The Bundle **SHALL** have an **entry** for each of the FHIR Resources required to convey information about the business event, starting with the MessageHeader which **SHALL** always be first.
- **A Message Header:** A **MessageHeader** Resource with **eventCoding** identifying the trigger event and other message related metadata including an **id**, **source.endpoint**, **destination.endpoint** is used to convey the purpose of the message and to support message routing.
- **The Focus of the Message:** **MessageHeader.focus** **SHALL** point to the **ServiceRequest**, **Task**, **Appointment** or **Communication** Resource that is being acted upon.
- **Other referenced entities and supporting information:** The MessageHeader and Focus **SHALL** reference other resources to convey information about the Patient who is the subject of the referral request ( **ServiceRequest.subject** ), the PractitionerRole of the requester ( **ServiceRequest.requester**, **MessageHeader.author** ), supporting information ( **ServiceRequest.supportingInfo** ), etc.
- **Identifiers & Timestamps:** Bundles and MessageHeaders **SHALL** have appropriate **Identifiers & Timestamps** as defined in the **FHIR messaging** requirements. Each **Bundle.entry** element **SHALL** have a **unique** **fullUrl** and **resource** so systems that receive messages can **resolve references** within the bundle.

The Event ( **MessageHeader.event** ) and Focus of the Message ( **MessageHeader.focus** ) determines the content and structure of the **Bundle** of information (FHIR Resources) exchanged between the RMS Source and the RMS Target.

# Referencing resources via Identifiers

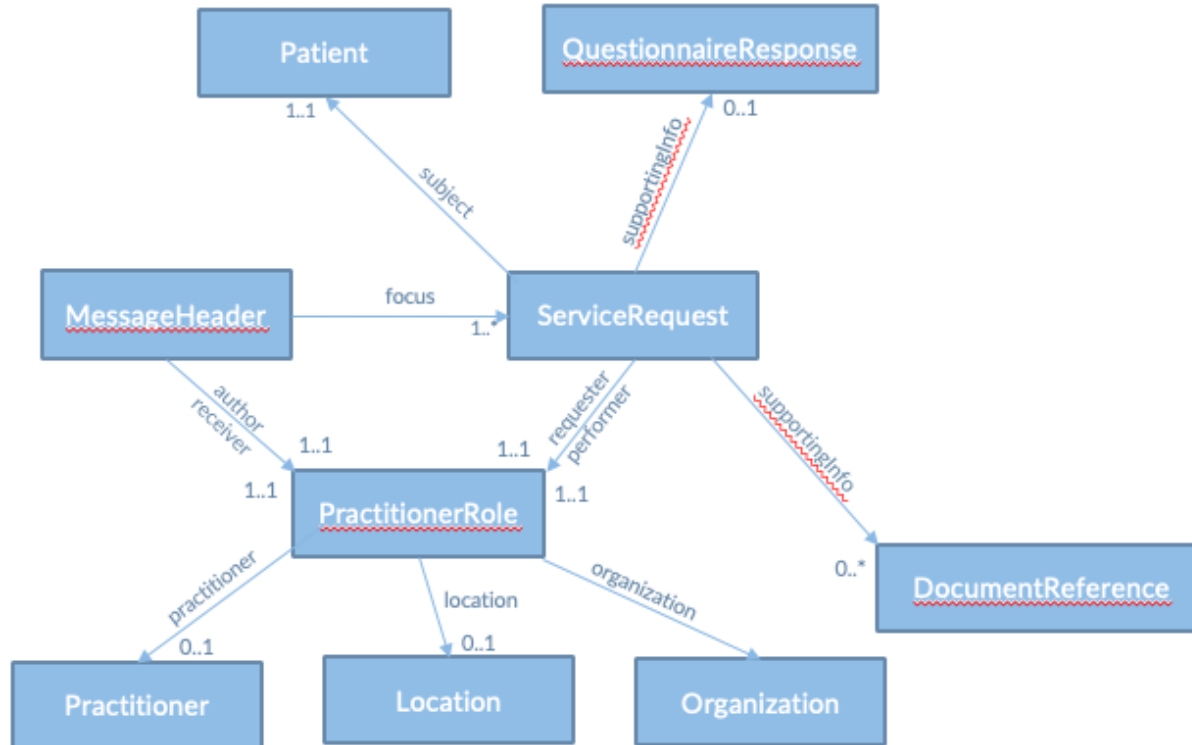
	Reference	I		Reference()
	reference	$\Sigma$ I	0..1	string
	type	$\Sigma$	0..1	uri <b>Binding</b>
	identifier	$\Sigma$	0..1	Identifier
	display	$\Sigma$	0..1	string

```
<basedOn><identifier>service request  
identifier</identifier></basedOn>
```

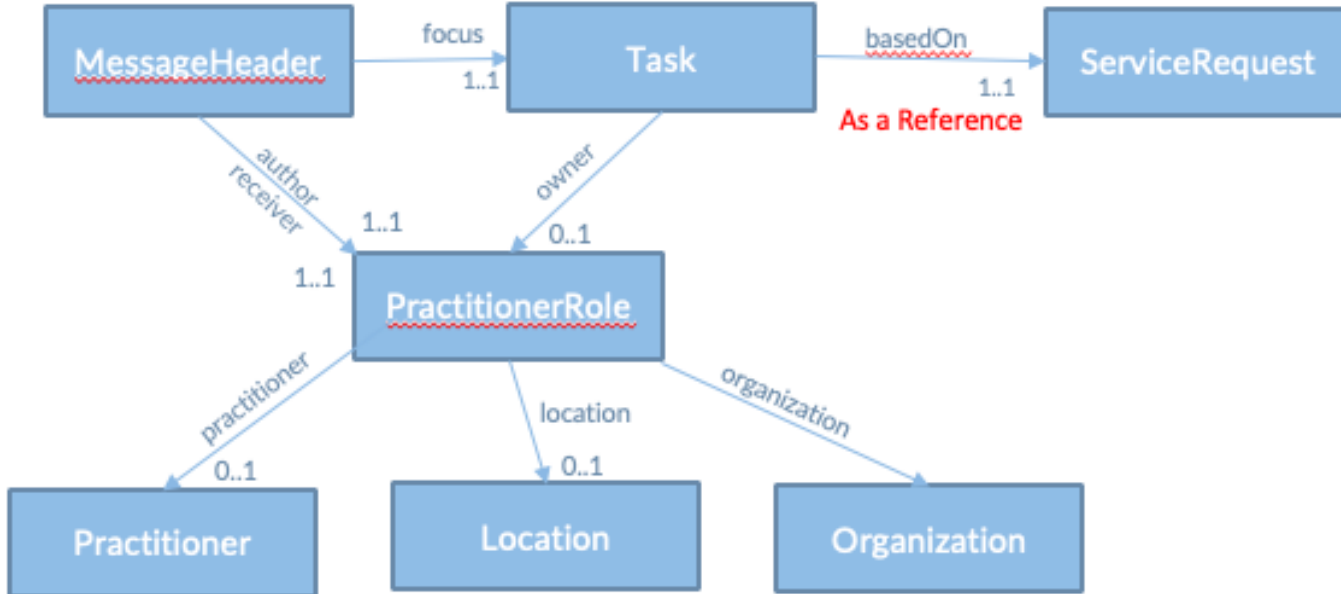
# Referencing Resources – Proposed Change

- For ServiceRequest (and supportingInfo)
  - contains information that may not all be stored on the receiver system
  - is referenced on subsequent messages sent by receiver in:
    - Task.basedOn, Appointment.basedOn, Communication.basedOn, ServiceRequest.basedOn, ServiceRequest.replaces, etc.
  - **Recommendation:** loosen constraints so ServiceRequest MAY be referenced via its business identifier only (not be included in the Bundle)
- For entities: (Patient, PractitionerRole, Practitioner, Organization, and Location)
  - some jurisdictions have a central identifier for some or all of these, however
  - including the resource instance in the Bundle is necessary to:
    - allow systems to ensure that the identified entity matches what they have in their system, and
    - to receive additional / current contact information that may be provided
  - **Recommended Change:** keep entities in the Bundle (loosen unnecessary MS constraints)

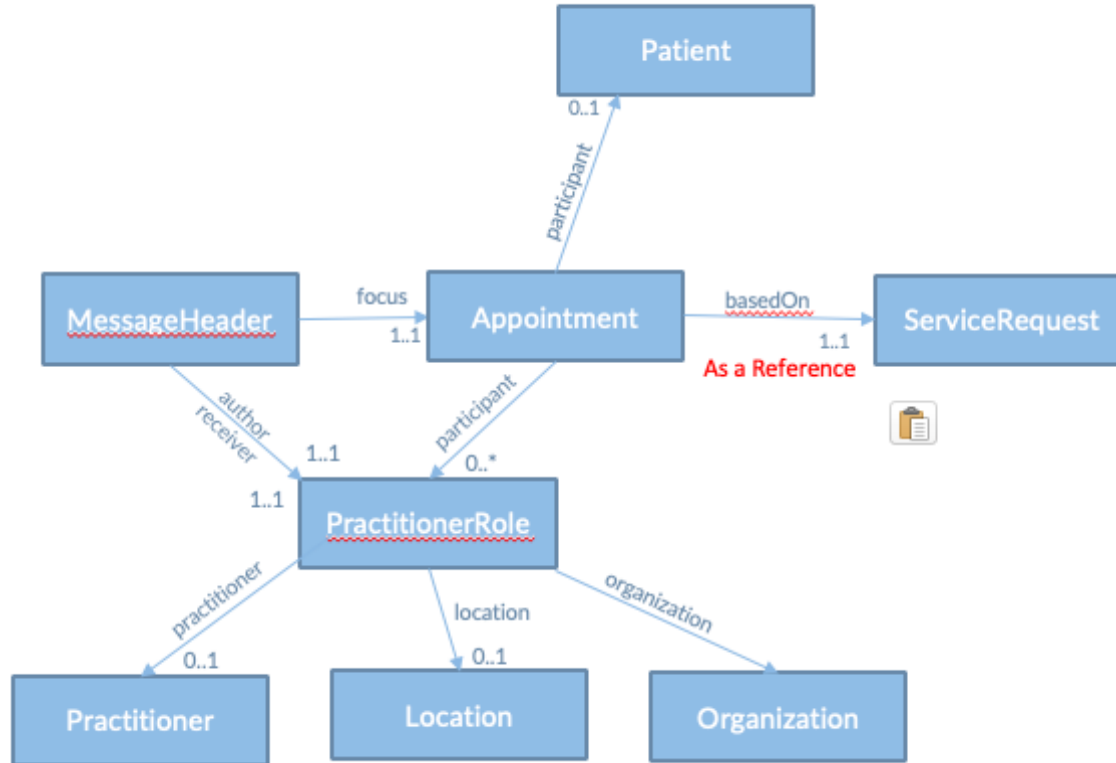
# ServiceRequest Bundle Content



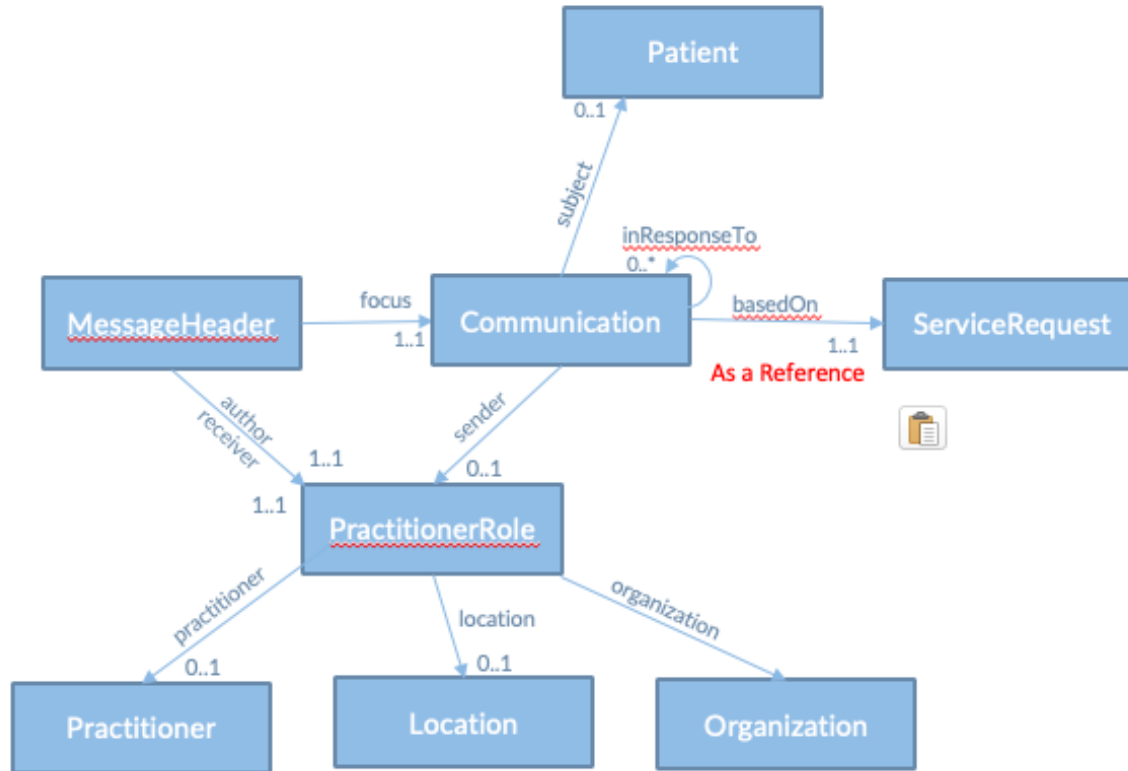
# Task Bundle Content



# Appointment Bundle Content



# Communication Bundle Content



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# Relaxing Must Support Requirements in profiles

Proposed approach to relaxing the current set of Must Support requirements found in the Ontario eReC guide:

- For entities (Patient, PractitionerRole, Practitioner, Organization, and Location) make only the ***minimum required*** to identify and contact the entity Must Support
  - WHY: while entities are required in all message Bundles to identify and contact relevant parties, the intent is to support processing of a referral not maintenance of demographic information in systems
- For MessageHeader, ServiceRequest, Task, Appointment, Communication, key information required to support the intent of the resource will be Must Support

# Patient



- Identifier/name/gender/birthDate required for matching/identification
- Telecom/address will be most current

[LINK TO PATIENT PROFILE](#)

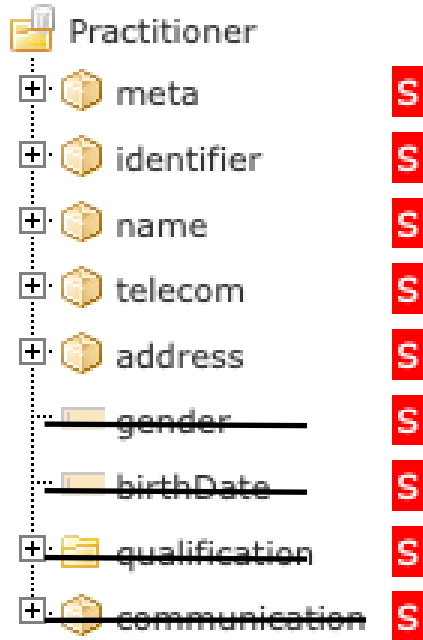
# PractitionerRole



- Identifier of PractitionerRole vs Practitioner / Organization / Location
- Active would always be fixed?
- Code?

[LINK TO PRACTITIONERROLE PROFILE](#)

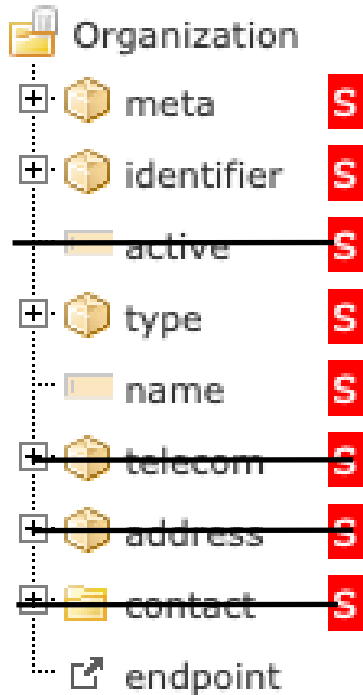
# Practitioner



- Practitioner Gender and BirthDate are generally not shared
- PractitionerRole carries code and specialty, probably don't need qualification

[LINK TO PRACTITIONER PROFILE](#)

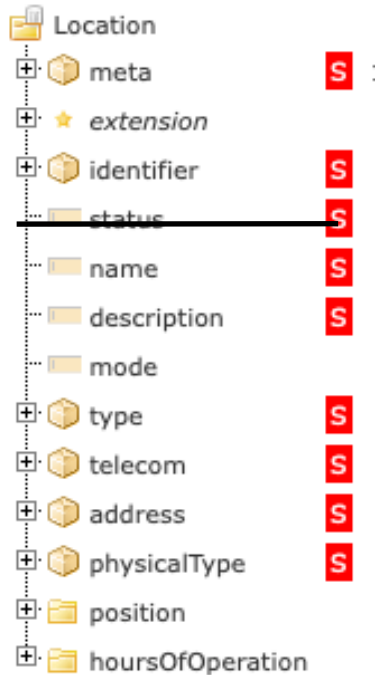
# Organization



[LINK TO ORGANIZATION PROFILE](#)

- Active would always be fixed?
- Telecom/Address are not generally needed for referrals
- PractitionerRole carries telecom information so contact is not necessary

# Location



- Should always be sending active locations, so status unnecessary
- Is Type/PhysicalType necessary?
- Add a virtual location extension? (see Appointment)

[LINK TO LOCATION PROFILE](#)

# Bundle / MessageHeader

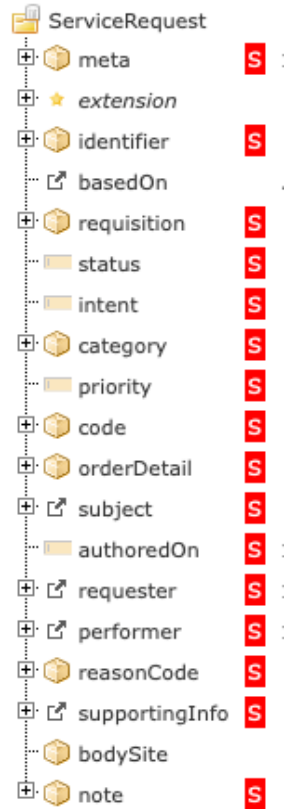
Bundle	I	Bundle
identifier	$\Sigma$	0..1 Identifier
type	$\Sigma$	1..1 code <b>Binding</b>
timestamp	$\Sigma$	1..1 instant
total	$\Sigma$ I	0..1 unsignedInt
link	$\Sigma$	0..* BackboneElement
entry	$\Sigma$ I	0..* BackboneElement
link	$\Sigma$	0..* see (link)
fullUrl	$\Sigma$	0..1 uri
resource	$\Sigma$	0..1 Resource
search	$\Sigma$ I	0..1 BackboneElement
request	$\Sigma$ I	0..1 BackboneElement
response	$\Sigma$ I	0..1 BackboneElement
signature	$\Sigma$	0..1 Signature

MessageHeader	I	MessageHeader
id	$\Sigma$	1..1 System.String
meta	$\Sigma$ E	1..1 Meta
extension	I	0..* Extension
event[x]	$\Sigma$	1..1
destination	$\Sigma$ E	1..* BackboneElement
sender	$\Sigma$ I	0..1 Reference(Practitioner   PractitionerRole   Orga...
enterer	$\Sigma$ I	0..1 Reference(Practitioner   PractitionerRole)
author	$\Sigma$ E I	1..1 Reference(PractitionerRole)
source	$\Sigma$ E	1..1 BackboneElement
responsible	$\Sigma$ I	0..1 Reference(Practitioner   PractitionerRole   Orga...
reason	$\Sigma$ E	0..1 CodeableConcept
response	$\Sigma$	0..1 BackboneElement
focus	$\Sigma$ E I	1..* Reference(ServiceRequest   Task   Patient   Ap...
definition	$\Sigma$	0..1 canonical(MessageDefinition)

[LINK TO BUNDLE PROFILE](#)

[LINK TO MESSAGEHEADER PROFILE](#)

# ServiceRequest



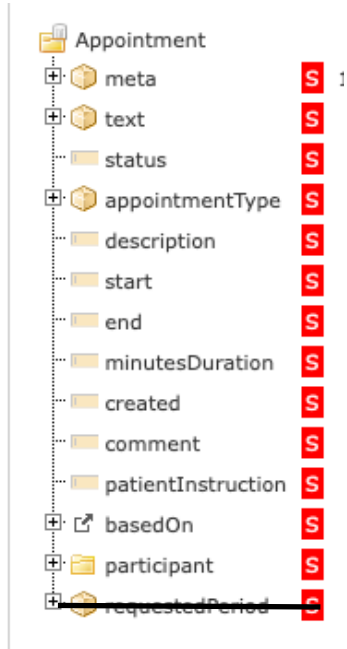
- Add Replaces to support routing/chaining/splitting?

# Task



- Need to provide identifiers for Tasks?
- Status vs BusinessStatus
- Do we have LastModified?
  - dateTime when an update of note/significance was made to the referral

# Appointment



- Start/end/minutesDuration vs requestedPeriod?
- Add a virtualService extension for virtual appointments?

# Communication



- Need to provide Identifiers for Communications?  
(not referenced in notes on page)

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# Upcoming Meetings and Next Steps

- Wednesday, March 20, 1 - 2 PM ET
  - 1) Managing Continuous Integration builds with the implementation guide
  - 2) Next steps with balloting
- March 27, 2024: Ballot release available for review
- April 27 to May 27, 2024: Ballot open for submissions



**Canada Health Infoway**

# Thank you!

## Contact Information

**VISIT OUR WEBSITE**  
[infoway-inforoute.ca](http://infoway-inforoute.ca)

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[insights.infoway-inforoute.ca/](http://insights.infoway-inforoute.ca/)

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