

EHR Interoperability and Lifecycle Model DSTUs – Incorporation in EHRS Functional Model Release 2 (Drafts in Development)

HL7 EHR Interoperability WG

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Conjoining HL7 EHR and EHRS Models

Objectives

- Bring Common Focus to System Functionality and Record Interoperability
- HL7 EHR System Functional Model Release 2, incorporate key content from:
 - HL7 EHR Interoperability Model DSTU
 - Passed ballot January 2007
 - HL7 EHR Lifecycle Model DSTU
 - Passed ballot February 2008
- Agreed by EHR WG, Kyoto, May 2009

EHR Interoperability/Lifecycle Models

DSTU Sections

- Correlation of Health, Healthcare and Health Information
- Correlation of instances
 - Actions taken
 - Action Records (to establish evidence of Actions taken)
 - EHR record entries (to persist evidence of Actions taken)
- Characteristics of Interoperable EHR Records offered as
 - Assertions (discrete Record Interoperability Requirements)
 - Examples
- Conformance Criteria specified for
 - EHR Systems and other Applications
 - In four key roles: source, transmitter, intermediary and receiver
 - EHR Records, to validate record instances at rest and in motion
 - EHR interchange standards

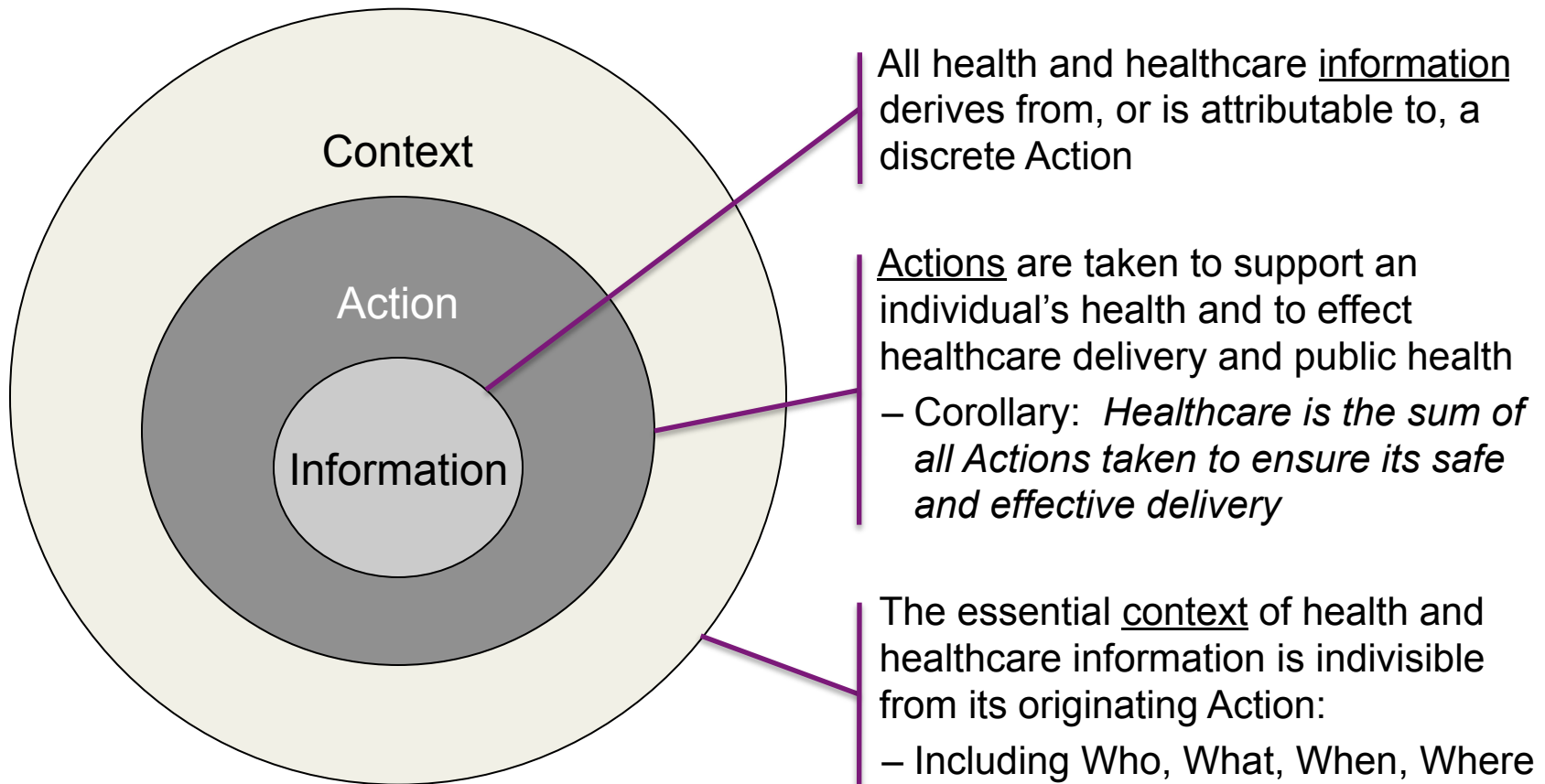
EHR Interoperability/Lifecycle Models

DSTU Sections, con't

- Stakeholder Assurance (to)
 - Patients, Consumers – As Record Subjects
 - Healthcare Providers – As Record Originators, Authors, Sources
 - Any Authorized Individual – As Record Recipient
- EHR Record Lifecycle and Lifespan
 - Lifecycle Events
 - Lifecycle Event Initiators
 - System Roles in EHR Record Lifecycle
 - Audit and Traceability
- Separately: Implementation Guide for CDA R2
 - DSTU passed ballot, January 2008
 - CDA Attributes fulfilling EHR Interop Requirements
 - With Testability Criteria

Health, Healthcare and Health Information Correlation

Information in Action in Context



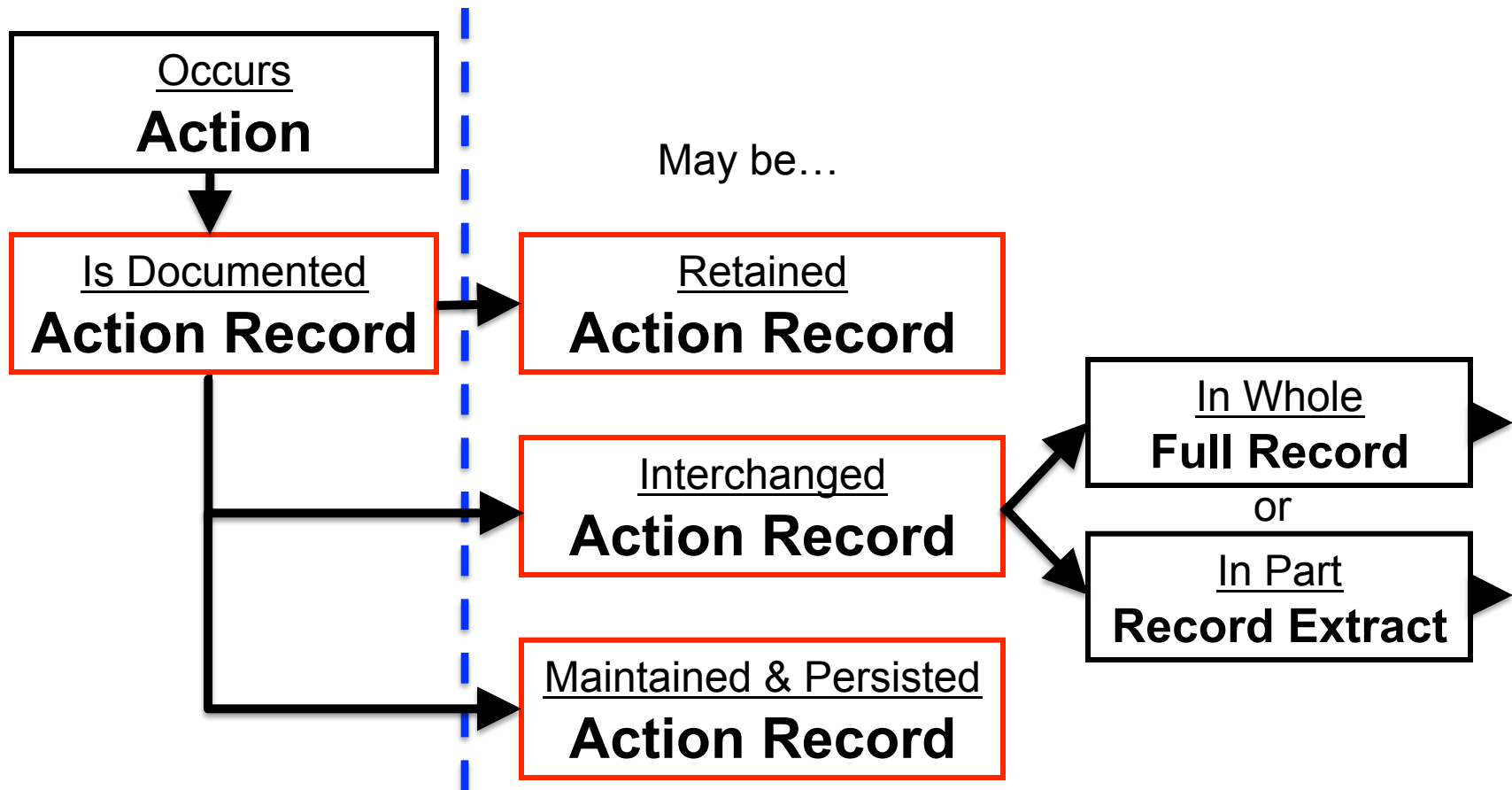
Action – Action Record – EHR Record Entry

Occurrence and Evidence

- An Action is taken
 - i.e., a Task or Procedure is performed or a Service is provided or rendered.
- A record is initiated
 - Documenting (evidencing) Action facts, findings and observations.
- The resulting Action Record may be:
 - Retained; and/or
 - Interchanged (in whole or in part); and/or
 - Maintained and persisted (e.g., as an EHR Entry).

Action – Action Record – EHR Record Entry

Occurrence and Evidence, con't



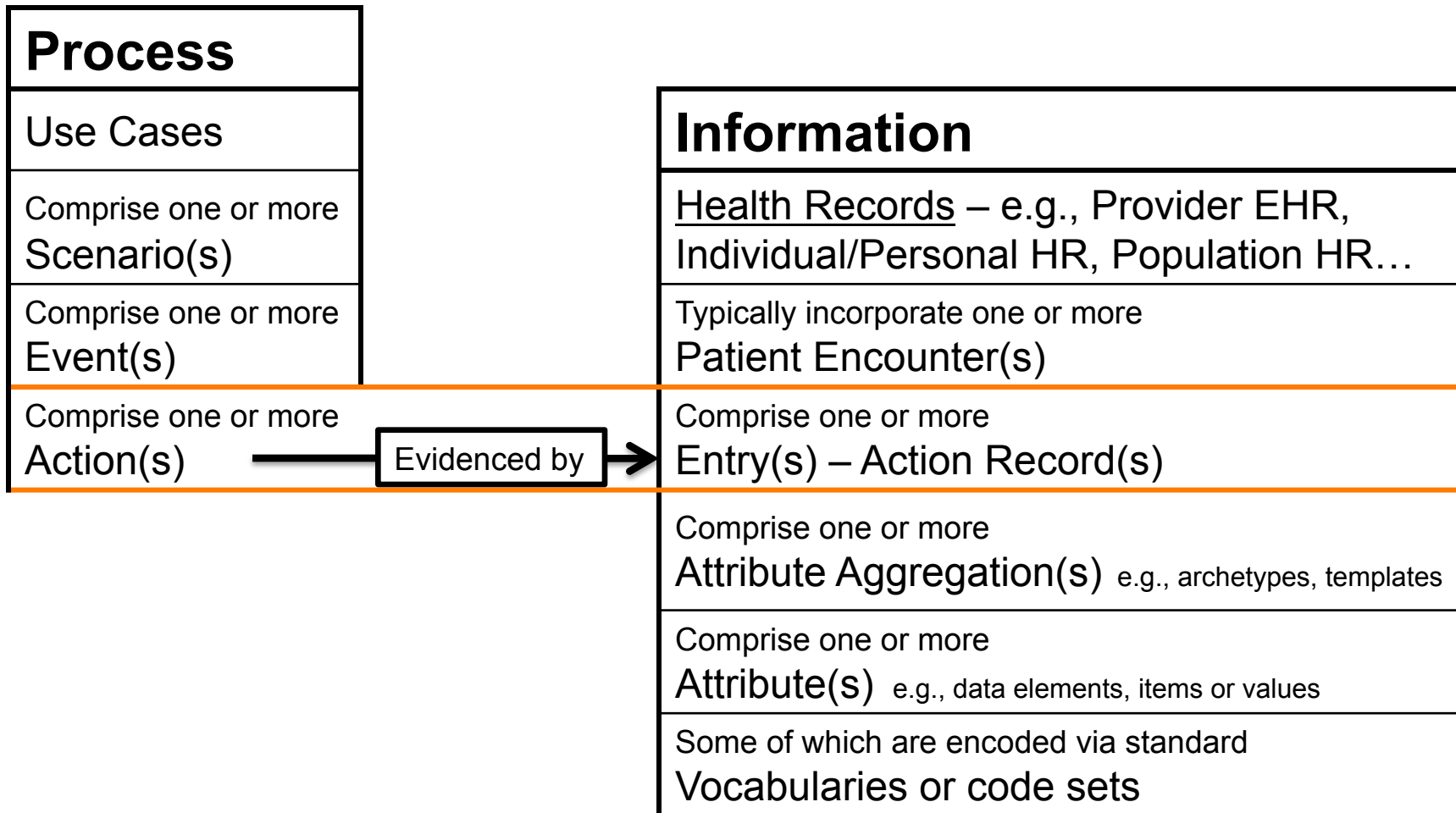
Action – Action Record – EHR Record Entry

Conjoined Instances

| Actions... | Action Records... |
|--|---|
| Are tasks, procedures or services, taken in <ul style="list-style-type: none">• Support of individual health• Provision, delivery of healthcare• Public Health | <ul style="list-style-type: none">• Document (evidence) each Action taken• May be entries in a persistent datastore: e.g., EHR or PHR• Form a common EHR unit of record |
| Occur instance-by-instance and chronologically over time | Have corresponding instances and chronology |
| Are a <i>unit of service</i> performed, rendered or provided | Have a corresponding <i>unit of record</i> |
| Have a context – who, what, when, where | Document (evidence) Action context |
| Are accountable as to participants involved | <ul style="list-style-type: none">• Document participating Actors• Ascribe source and authorship• Are attestable for accuracy, completeness• May be digitally signed |

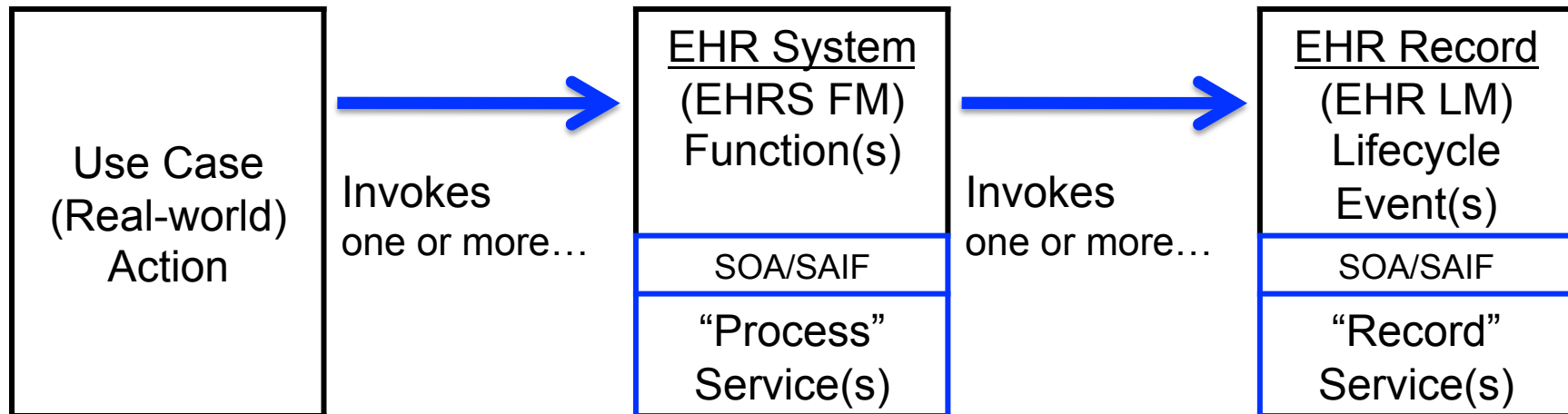
Process and Information Correlation

Typical Hierarchy & Intersection



Real-World to EHR System to EHR Record

Use Case > Function > Event



EHR Interop to EHRS Functional Model Release 2

A-G: Assertions, Examples

| EHR/IM Column | Current | Proposed |
|---------------|---------------------------|--|
| A | ID | New Draft Section Interop-1 (A, B, C, E, F) |
| B | Assertion/Characteristic | |
| C | Elaboration | |
| D | <Attribute Class> | Remove (now included in CDA R2 Reference Profile DSTU) |
| E | Example | New Draft Section Interop-1 (A, B, C, E, F) |
| F | Use Case Example | |
| G | Legal Record Requirement? | TBD – Coordinate with RM-ES Team In Table with B? |

EHR Interop to EHRS Functional Model Release 2

H-L: Conformance Criteria

| EHR/IM Column | Current | Proposed |
|---------------|----------------------------|--|
| H-L | Conformance Criteria | New Draft Section Interop-2 (A, B, H-L) |
| H | Source EHRS/Application | |
| I | Source EHRS - Outbound | |
| J | Interchange Standard | |
| K | Intermediary Application | |
| L | Receiving EHRS/Application | |

| | | |
|-----|---------------------------|--|
| M-O | Key Stakeholder Assurance | New Draft Section Interop-3 (A, B, M, N, O) |
| M | Patient (Record Subject) | |
| N | Record Author/Originator | |
| O | Record Recipient | |

EHR Interop to EHR Functional Model Release 2

P-U: References, CDA R2

| EHR/IM Column | Current | Proposed |
|---------------|----------------------|--|
| P | Standards Reference | Include in EHR/FM References |
| Q | EHR/FM Reference | |
| R | Normative Clause | Remove |
| S | Progression | |
| T | CDA R2 Reference | Remove – Already updated, balloted and published as “CDA R2 Reference Profile for EHR Interoperability” DSTU |
| U | Testability Criteria | |

EHR Lifecycle to EHR Functional Model Release 2

Section by Section

| EHR/LM Section | Current | Proposed |
|----------------|-------------------------------------|---------------------------------|
| 1 | Background | New Draft Section Interop-Intro |
| 2 | Purpose | |
| | Lifecycle Graphic from ISO 21089 | |
| 3 | Objectives | |
| 4 | Health(care) Delivery | |
| 5 | The Health(care) Act | |
| 6 | The Act Record | |
| 7 | The Act/Act Record Paradigm | |
| 8 | The Act Record Interchange Paradigm | |

EHR Lifecycle to EHRS Functional Model Release 2

Section by Section, con't

| EHR/LM Section | Current | Proposed |
|----------------|-------------------------------------|-------------------------------|
| 9 | Events in the Act Record Lifecycle | New Draft Section Lifecycle-1 |
| 10 | EHR Lifecycle Event Initiators | |
| 11 | Description of EHR Lifecycle Events | |
| 12 | System Roles in the EHR Lifecycle | New Draft Section Lifecycle-2 |
| 13 | Audit and Traceability | |
| 14 | Conformance Criteria | |

EHR IM/LM to EHR Functional Model Release 2

Proposed Inserts

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- 1) EHR Interoperability/Lifecycle Introduction ([Interop-Intro](#))
- 2) Characteristics of Interoperable EHR Records ([Interop-1](#))
- 3) EHR Record Lifecycle Events ([Lifecycle-1](#))

...

- 4) DC, S, IN – column linking function to lifecycle event(s)
(and corresponding SOA/SAIF Service?)

...

- 5) Conformance Criteria for System Roles ([Interop-2](#))
- 6) Conformance Criteria for Lifecycle Events ([Lifecycle-2](#))

...

- 7) New Appendix: Stakeholder Assurance ([Interop-3](#))