

HL7 Electronic Health Record Work Group
 EHR System Functional Model Release 2 – Record Infrastructure – Record Lifecycle Event Metadata on FHIR
 DRAFT FHIR Resource Analysis, Comments, Proposals – 23 September 2014

Blue = proposed additions Red = resource attributes and code/value sets identified as Record Lifecycle Event Metadata

| Resource | Resource Attribute | Description | Value Set | Lifecycle Event - Notes |
|------------------------------|---|---|--|--|
| Provenance | → | Who, What, When for a set of resources | | |
| | target : Resource(Any) 1..* | Target resources (usually version specific) | | <ul style="list-style-type: none"> Resource Instance IDs Record Entry ID (?) |
| | period : Period 0..1 | When the activity occurred | | |
| | recorded : instant 1..1 | When the activity was recorded/updated | | |
| | reason : CodeableConcept 0..1 | Reason activity is occurring | TBD | Need code/value set |
| | location : Resource(Location) 0..1 | Where the activity occurred, if relevant | | |
| | policy : uri 0..* | Policy or plan the activity was defined by | | |
| | signature : string 0..1 | Base64 signature (DigSig) - integrity check | | Digital signature binds data and provenance, binds resources in Record Entry instance: Provenance + SecurityEvent + Others |
| Provenance. Agent 0..* | → | Person, organization, records, etc. involved in creating resource | | |
| | role : Coding 1..1 « ProvenanceAgentRole+ » | e.g. author overseer enterer attester source cc | Enterer, performer, author, verifier, attester, informant, source, cc, application, daemon | Confirm Value Set |
| | type : Coding 1..1 « ProvenanceAgentType+ » | e.g. Resource Person Application Record Document | Person, practitioner, organization, software, record, document | Confirm Value Set |
| | reference : uri 1..1 | Identity of agent (urn or url) | | |

| Resource | Resource Attribute | Description | Value Set | Lifecycle Event - Notes |
|----------------------------------|--|---|--|-------------------------------|
| SecurityEvent. Event 1..1 | → | What was done | | |
| | type : CodeableConcept 1..1 « SecurityEventType+ » | Type/identifier of event | Rest + DICOM codeset | Confirm Value Set |
| | subtype : CodeableConcept 0..* « SecurityEventSubType+ » | More specific type/id for the event | Read, vread, update, delete, validate, create, history-instance, history-type, history-system, search-type, search-system, transaction + DICOM codeset | Confirm Value Set |
| | action : code 0..1 « SecurityEventAction » | Type of action performed during the event | C) Create R) Read/view/print U) Update D) Delete E) Execute. | Map Lifecycle Events to CRUDE |
| | dateTime : instant 1..1 | Time when the event occurred on source | | |
| | location : Resource(Location) 0..1 | Where the activity occurred, if relevant | | |
| | reason : CodeableConcept 0..1 | Reason activity is occurring | TBD | Need code/value set |
| SecurityEvent. Source 1..1 | → | Application systems and processes | | |
| | site : string 0..1 | Logical source location within the enterprise | | |
| | identifier : string 1..1 | The id of source where event originated | | |
| | type : CodeableConcept 1..1 « SecurityEventSourceType+ » | The type of source where event originated | 1) User Device; 2) Data Interface; 3) Web Server; 4) Application Server; 5) Database Server; 6) Security Server; 7) Network Device; 8) Network Router; 9) Other. | Confirm Value Set |
| | location : Resource(Location) 0..1 | Where the activity occurred, if relevant | | |

| Resource | Resource Attribute | Description | Value Set | Lifecycle Event - Notes |
|----------------------------------|---|--|--|--|
| SecurityEvent. Object 0..* | → | Specific instances of data or objects accessed | | |
| | identifier : Identifier 0..1 | Specific instance of object (e.g. versioned) | | |
| | reference : Resource(Any) 0..1 | Specific instance of resource (e.g. versioned) | | |
| | type : code 0..1 « SecurityEventObjectType » | Object type being audited | 1) Person; 2) System Object; 3) Organization; 4) Other. | Confirm Value Set |
| | role : code 0..1 « SecurityEventObjectRole » | Functional application role of Object | 1) patient; 2) location; 3) report; 4) resource; 5) master file; 6) user; 7) list; 8) doctor; 9) subscriber; 10) guarantor; 11) security user entity; 12) security user group; 13) security resource; 14) security granularity definition; 15) practitioner; 16) data destination; 17) data reposition; 18) schedule; 19) customer; 20) job; 21) job stream; 22) table; 23) routing criteria; 24) query. | Confirm Value Set |
| | lifecycle : code 0..1 « SecurityEventObjectLifecycle » | Life-cycle stage for the object | 1 OriginationCreation; 2) Import/Copy from original; 3) Amendment; 4) Verification; 5) Translation; 6) Access/Use; 7) De-identification; 8) Aggregation, summarization, derivation; 9) Report; 10) Export/Copy to target; 11) Disclosure; 12) Receipt of disclosure; 13) Archiving; 14) Logical deletion; 15) Permanent erasure/Physical destruction | <ul style="list-style-type: none"> • Need to match EHR-S FM Lifecycle Event set of 24 • Core or Profile? |
| | sensitivity : code 0..1 « SecurityEvent.object.sensitivity » | Policy-defined sensitivity for the object | L) Low; M) Moderate; N) Normal; R) Restricted; U) Unrestricted; V) Very restricted. | Confirm Value Set |

| Resource | Resource Attribute | Description | Value Set | Lifecycle Event - Notes |
|---|---|--|-----------|-------------------------|
| SecurityEvent. Participant 1..* | → | A person, a hardware device or software process | | |
| | role : CodeableConcept 0..* « DICOMRoleId+ » | User roles (e.g. local RBAC codes) | | Confirm Value Set |
| | reference : Resource(Practitioner Patient Device) 0..1 | Direct reference to resource | | |
| | userId : string 0..1 | Unique identifier for the user | | |
| | requester : Boolean 1..1 | Whether user is initiator | | |
| SecurityEvent. Participant. Network 0..1 | → | Logical network location for application activity | | |
| | identifier : string 0..1 | Identifier for the network access point of a user device | | |
| | type : code 0..1 « SecurityEventParticipantNetworkType » | The type of network access point | | Confirm Value Set |

| AbstractEvent Resource (to capture Action who, what, when, where and why) | | | | |
|---|--|---|-----------|-------------------------|
| Resource | Resource Attribute | Description | Value Set | Lifecycle Event - Notes |
| AbstractEvent. Event 1..1 | action : code 0..1 « Action » | WHAT – Type of action performed during the event | | Confirm Value Set |
| | dateTime : instant 1..1 | WHEN – Time when the action occurred | | |
| | location : Resource(Location) 0..1 | WHERE – Where the activity occurred, if relevant | | |
| | reason : CodeableConcept 0..1 | WHY – Reason activity is occurring | TBD | Need code/value set |
| AbstractEvent. Participant 1..* | | WHO – A person, hardware device or software process | | |
| | role : CodeableConcept 0..* « DICOMRoleId+ » | User roles (e.g. local RBAC codes) | | Confirm Value Set |
| | reference : Resource(Practitioner Patient Device) 0..1 | Direct reference to resource | | |
| | userId : string 0..1 | Unique identifier for the user | | |