HL7 Electronic Health Record Work Group
EHR System Functional Model Release 2 – Record Lifecycle Event Metadata on FHIR
DRAFT Mapping and Analysis Notes – 9 September 2014

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

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)		• Resource Instance IDs • Record Entry ID (?)
	period : Period 0..1	When the activity occurred		
	recorded : instant 1..1	When the activity was recorded/updated		
	location : Resource(Location) 0..1	Where the activity occurred, if relevant		
	reason : CodeableConcept 0..1	Reason activity is occurring	TBD	Need code/value set
	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+ »		Enterer, performer, author, verifier, attester, informant, source, cc, application, daemon	Confirm Value Set
	type : Coding 1..1 « ProvenanceAgentType+ »		Practitioner, organization, software, record, document	Confirm Value Set
	reference : uri 1..1			

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		

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	• 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

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)				
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		