



RS 816.111

Complemento 2.2 all'allegato 5 dell'ordinanza del DFI del 22 marzo 2017 sulla cartella informatizzata del paziente

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## Profili d'integrazione nazionale secondo l'articolo 5 capoverso 1 lettera c OCIP-DFI

### Audit Trail Consumption (CH:ATC)

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Complemento 2.2 all'allegato 5 OCIP-DFI : Adeguamenti nazionali

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## 1 Introduction

Il presente documento è stato creato per adempiere i disciplinamenti svizzeri dell'ordinanza sulla cartella informatizzata del paziente (OCIP; RS 816.11). L'OCIP e l'OCIP-DFI (RS 816.111) sono pubblicate nella Raccolta ufficiale (in italiano, francese e tedesco)<sup>1</sup>.

La cartella informatizzata del paziente (CIP) si basa su un sistema che prevede numerose comunità IHE-XDS, in cui il paziente non accorda solo il consenso per la costituzione e l'utilizzo della sua cartella, ma stabilisce esplicitamente anche regole per l'accesso tramite un apposito portale per pazienti.

Il paziente e, se disponibile, il suo rappresentante devono potere consultare i verbali contenuti nella cartella informatizzata presso qualsiasi comunità e comunità di riferimento mediante un apposito portale per pazienti e in una forma leggibile. Questo profilo CH:ATC definisce i requisiti in materia di audit trail consumption che una comunità deve soddisfare in vista dell'audit trail per il paziente.

This document fulfils the Swiss regulations of the Ordinance on the Electronic Patient Record (EPRO, SR 816.11). The EPRO and the EPRO-FDHA (SR 816.111) are published in Official Compilation of Federal Legislation (available in German, French and Italian)<sup>Erreur ! Signet non défini.</sup>

The Swiss Electronic Health Record (EPR) depends on an IHE XDS and multi-community based system where the patient not only consents to the creation and use of the record, but does so by explicitly defining access rules through a patient portal.

Patients – and, if existing, their representatives – have the right to access the audit trail within the EPR circle of trust. The access to the audit trail will be provided by certified web access portals for patients. This profile CH:ATC defines the audit trail consumption requirements which a community has to meet in order to provide a patients audit trail.

<sup>1</sup> German: <https://www.admin.ch/opc/de/classified-compilation/20111795/index.html>;  
French: <https://www.admin.ch/opc/fr/classified-compilation/20111795/index.html>;  
Italian: <https://www.admin.ch/opc/it/classified-compilation/20111795/index.html>.

## 2 Volume 1 – Integration Profiles

### 2.1 Overview

This profile defines the audit trail consumption requirements a community has to provide for a patient's audit trail.

The profile CH:ATC defines and precises the actors and Retrieve Audit Event [ITI-81] of the IHE ITI Supplement Add RESTful Query to ATNA<sup>23</sup> and defines the content of the Audit Messages. The different types of the Audit Messages are based on the requirements for Document and Access Policy management as well as the entry of healthcare professionals into a group in order to achieve the Swiss regulation needs on the audit trail access by patients. These Audit Event types differ from the Audit Events which have also to be logged according to the ATNA requirements.

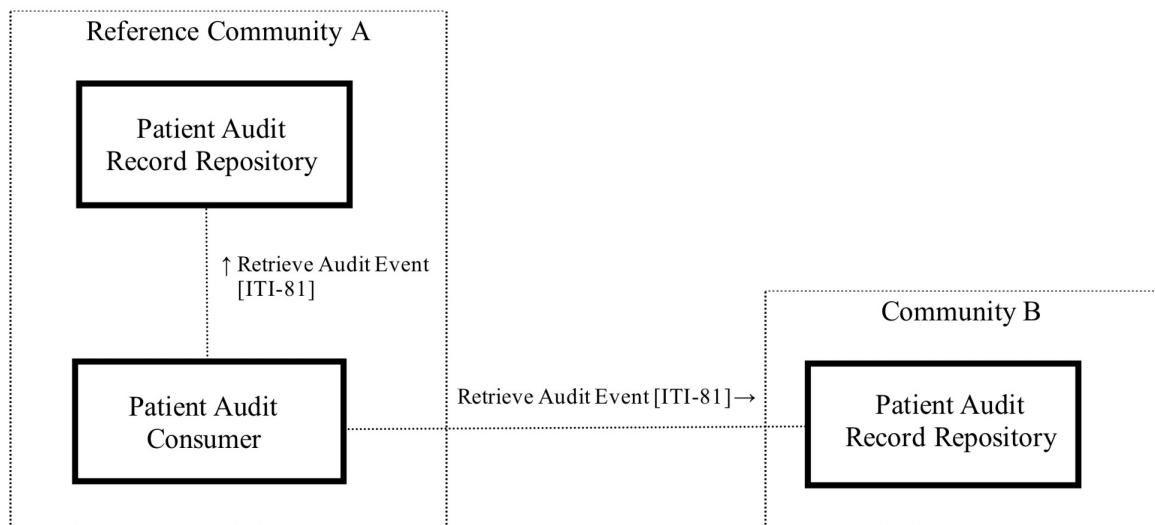


Figure 1: CH:ATC Overview within the Swiss EPR circle of trust

Each community shall provide one endpoint to a Patient Audit Record Repository which can be queried according to the Retrieve Audit Event [ITI-81] RESTful Query transaction. A reference community shall implement a Patient Audit Consumer which will query all Patient Audit Record Repositories, aggregate the results and provide it to the patient.

How the Patient Audit Record Repository generates or collects the specified Audit Events within the community is outside the scope of this profile.

<sup>2</sup> IHE IT Infrastructure Technical Framework Supplement Add RESTful ATNA (Query and Feed), Revision 3.3, July 2, 2021.

<sup>3</sup> [https://www.ihe.net/uploadedFiles/Documents/ITI/IHE\\_ITI\\_Suppl\\_RESTful-ATNA\\_Rev2.2\\_TI\\_2017-07-21.pdf](https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_Suppl_RESTful-ATNA_Rev2.2_TI_2017-07-21.pdf).

## 2.2 Actors, Transactions and Content Modules

Figure 2 shows the actors directly involved in the CH:ATC Profile and the relevant transactions between them. If needed for context, other actors that may be indirectly involved due to their participation in other related profiles are shown in dotted lines.

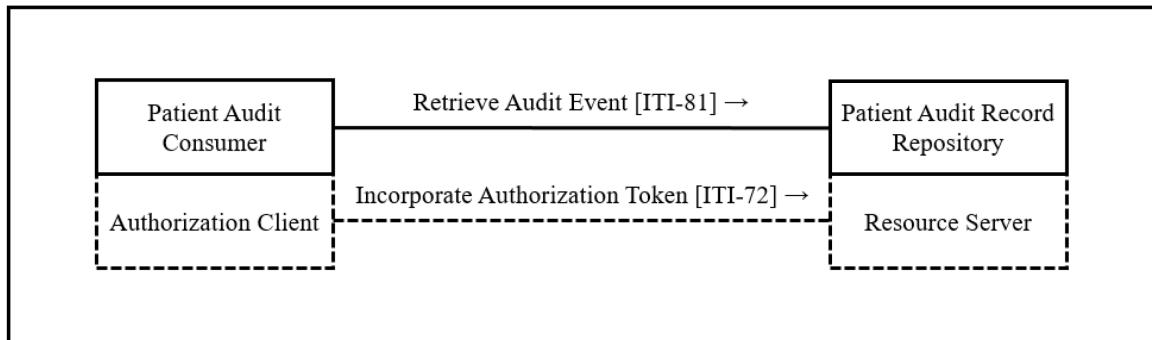


Figure 2: CH:ATC Actor diagram

Table 1 lists the transactions for each actor directly involved in the CH:ATC Profile. To claim compliance with this Profile, an actor shall support all required transactions (labeled "R") and may support the optional transactions (labeled "O").

Actors	Transactions	Initiator or Responder	Opt	Reference
Patient Audit Consumer	Retrieve Audit Event [ITI-81]	Initiator	R	CH:ATC 2.2.3
Patient Audit Record Repository	Retrieve Audit Event [ITI-81]	Responder	R	CH:ATC 2.2.2

Table 1: CH:ATC Profile - Actors and Transactions

### 2.2.1 Actor Descriptions and Actor Profile Requirements

The actors defined in this profile are based on the IHE ITI TF-2<sup>6</sup> and the IHE ITI Supplement Add RESTful Query to ATNA<sup>4</sup> actors. This section documents any additional requirements on the profile's actors required in the Swiss EPR context.

### 2.2.2 Patient Audit Record Repository

For the actor Patient Audit Record Repository the actor Audit Record Repository in IHE ITI Supplement Add RESTful Query to ATNA<sup>4</sup> is relevant.

The Patient Audit Record Repository shall support the Retrieve Audit Message Option from the Audit Record Repository (IHE ITI TF-1<sup>5</sup>, chapter 9.2.3) with the search capabilities as defined in IHE ITI TF-2<sup>6</sup>, chapter 3.81 and the Audit Message Formats defined in Volume 3 – Content Profiles.

### 2.2.3 Patient Audit Consumer

For the actor Patient Audit Consumer the actor Audit Consumer in IHE ITI Supplement Add RESTful Query to ATNA<sup>7</sup> is relevant.

The Patient Audit Consumer queries a Patient Audit Record Repository for Audit Events defined by this profile. The Patient Audit Consumer shall support the Retrieve Audit Message Option from the Audit Consumer (ITI TF-1<sup>8</sup>, chapter 9.2.3).

<sup>4</sup> IHE IT Infrastructure Technical Framework Supplement Add RESTful ATNA (Query and Feed), Revision 3.3, July 2, 2021.

<sup>5</sup> IHE IT Infrastructure (ITI) Technical Framework, Volume 1, Revision 19.0, June 17, 2022.

<sup>6</sup> IHE IT Infrastructure (ITI) Technical Framework, Volume 2, Revision 19.0, June 17, 2022.

<sup>7</sup> IHE IT Infrastructure Technical Framework Supplement Add RESTful ATNA (Query and Feed), Revision 3.3, July 2, 2021.

<sup>8</sup> IHE IT Infrastructure (ITI) Technical Framework, Volume 1, Revision 19.0, June 17, 2022.

The Patient Audit Consumer should filter duplicate AuditEvents for display (e.g. Document Retrieval Audit Event for the same document access are in multiple Patient Audit Record Repositories, because the requesting and responding community need to make the AuditEvent available).

Subsequent processing like translation of the coded elements into the users preferred language and display of the query result is not defined in this profile.

### 2.3 Integration Profile Options

CH:ATC Actor	Option name
Patient Audit Consumer	Aggregate Audit Message Option
Patient Audit Record Repository	–

Table 2: Actors and Options

The aggregate Audit Message Options allows the Patient Audit Consumer to aggregate results from multiple Patient Audit Record Repositories. A reference community shall support at least one Patient Audit Consumer with this Option.

### 2.4 Actor Groupings

An actor from this profile (Column 1) shall implement all of the required transactions and/or content modules in this profile ***in addition to all*** of the requirements for the grouped actor.

CH:ATC Actor	Grouping Condition	Actor to be grouped with	Reference
Patient Audit Consumer	Required	ATNA – Secure Node	Amendment 1 of Annex 5 EPRO-FDHA
	Required	CT – Time Client	IHE ITI TF-1 <sup>8</sup>
	Required	IUA – Authorization Client	IHE ITI Suppl IUA <sup>9</sup>
	Optional	CH:CPI – CPI Consumer	Amendment 2.3 of Annex 5 EPRO-FDHA
Patient Audit Record Repository	Required	ATNA – Secure Node	Amendment 1 of Annex 5 EPRO-FDHA
	Required	CT – Time Client	IHE ITI TF-1 <sup>8</sup>
	Required	CH:ADR – Authorization Decision Consumer	Amendment 2.1 of Annex 5 EPRO-FDHA
	Required	IUA – Resource Server	IHE ITI Suppl IUA <sup>10</sup>

Table 3: Actor Grouping

Section 2.6 describes the groupings required for security considerations.

### 2.5 Overview – Use Cases

Activities related to the EPR are audited for specific document and access policy management events as well as entry events of healthcare professionals into a group and stored in the communities.

This profile supports the following Use Cases:

- a. A patient can request protocols of the activities related to his EPR.
- b. A patient representative can request a protocol of the activities related to the patients delegated EPR.

<sup>9</sup> IHE ITI Technical Framework Supplement Internet User Authorization (IUA), Revision 2.2, June 17, 2022.

<sup>10</sup> IHE ITI Technical Framework Supplement Internet User Authorization (IUA), Revision 2.2, June 17, 2022.

## 2.6 Security Considerations

The transaction is used to exchange sensitive information and requires authentication and authorization. This profile requires all actors to be grouped with Secure Node or Secure Application implementing the "STX: TLS 1.2 floor using BCP195 Option" defined in the IHE ITI TF-2<sup>11</sup>, chapter 3.19.6.2.3.

Access control shall be implemented by grouping the CH:ATC Audit Consumer and Audit Record Repository with the Authorization Client and Resource Server from the IUA trial implementation profile using the SAML Token option (see IHE ITI Supplement IUA<sup>10</sup>, chapter 3.72.4.3.2). As defined therein, the CH:ATC Audit Consumer and Audit Record Repository shall implement the Incorporate Authorization Token [ITI-72] transaction to convey the XUA token.

The CH:ATC Patient Audit Record Repository shall be grouped with CH:ADR, i.e. the CH:ATC Patient Audit Record Repository shall use the CH:ADR Authorization Decision Request transaction to authorize the transaction and enforce the authorization decision retrieved from CH:ADR Authorization Decision Response.

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<sup>11</sup> IHE IT Infrastructure (ITI) Technical Framework, Volume 2, Revision 19.0, June 17, 2022.

## 3 Volume 2 – Transactions

### 3.1 Constraints on Retrieve ATNA Audit Event [ITI-81]

The Retrieve ATNA Audit Event [ITI-81] transaction is defined in IHE ITI TF-2<sup>11</sup> and the IHE ITI Supplement Add RESTful Query to ATNA<sup>12</sup>. The following rules shall be applied for the CH:ATC profile.

#### 3.1.1 Message Semantics

The Retrieve ATNA Audit Event message shall be a HTTP GET request sent to the Patient Audit Record Repository. This message is a FHIR search (see <http://hl7.org/fhir/R4/search.html>) on AuditEvent Resources (see <http://hl7.org/fhir/R4/auditevent.html>). This "search" target is formatted as:

**<scheme>://<authority>/<path>/AuditEvent?date=ge[start-time]&date=le[stop-time]&<query>**

where:

- a. **<scheme>** shall be https.
- b. **<query>** shall include the entity.identifier as defined in 3.1.2 and may include additional ATNA Search parameters. If entity.identifier is not included an HTTP response code 400 - Bad Request shall be returned.

#### 3.1.2 Additional ATNA Search Parameters

The Patient Audit Consumer shall not use the following parameters in a query parameters: address, patient.identifier, source, type, user, outcome. The Patient Audit Consumer may use other parameters as listed in Retrieve Audit Event [ITI-81].

**entity.identifier** is a parameter of token type. This parameter specifies unique identifier for the object. The parameter value should be identified in accordance to the entity type;

For example:

`https://example.com/ARRservice/AuditEvent?date=ge2020-03-22&date=le2025-03-22&entity.identifier=urn:oid:2.16.756.5.30.1.127.3.10.3|5678`

The Audit Record Repository shall match this parameter with the AuditEvent.entity.what.identifier field that is of type identifier (ParticipantObjectID in DICOM schema).

For the CH:ATC profile the entity.identifier has to be the EPR-SPID:

`entity.identifier=urn:oid:2.16.756.5.30.1.127.3.10.3|<<value EPR-SPID>>`

#### 3.1.3 Message Semantics for Response

The returned AuditEvent FHIR resources in the Bundle shall conform the CH:ATC AuditEvent profile, see section 4.

#### 3.1.4 Security Considerations

The transaction is used to exchange sensitive information and requires authentication and authorization. This profile requires all actors to be grouped with Secure Node or Secure Application implementing the "STX: TLS 1.2 floor using BCP195 Option" defined in the IHE ITI TF-2<sup>13</sup>, chapter 3.19.6.2.3.

Access control shall be implemented by grouping the CH:ATC Audit Consumer and Audit Record Repository with the Authorization Client and Resource Server from the IUA trial implementation profile using the SAML Token option (see IHE ITI Supplement IUA<sup>14</sup>, chapter 3.72.4.3.2). As defined

<sup>12</sup> IHE IT Infrastructure Technical Framework Supplement Add RESTful ATNA (Query and Feed), Revision 3.3, July 2, 2021.

<sup>13</sup> IHE IT Infrastructure (ITI) Technical Framework, Volume 2, Revision 19.0, June 17, 2022.

<sup>14</sup> IHE ITI Technical Framework Supplement Internet User Authorization (IUA), Revision 2.2, June 17, 2022.



therein, the CH:ATC Audit Consumer and Audit Record Repository shall implement the Incorporate Authorization Token [ITI-72] transaction to convey the XUA token.

The actors shall implement the Incorporate Authorization Token [ITI-72] transaction with SAML token option, using the base64url encoded SAML assertion defined in XUA to the authorization header of the HTTP1.1 GET request with key "Bearer" as follows:

```
GET /example/url/to/resource/location HTTP/1.1
```

```
Authorization: "Bearer" fFBGRNJru1FQd[...omitted for brevity...]44AzqT3Zg
```

```
Host: examplehost.com
```

The CH:ATC Patient Audit Record Repository shall be grouped with CH:ADR, i.e. the CH:ATC Patient Audit Record Repository shall use the CH:ADR Authorization Decision Request transaction to authorize the transaction and enforce the authorization decision retrieved from CH:ADR Authorization Decision Response.

### 3.1.5 Security Audit Considerations

An audit event as specified in section 4.4 Access Audit Trail Content Profile shall be returned by a query to Patient Audit Record Repository after the Patient Audit Record Repository has been queried by a Patient Audit Consumer.

## 4 Volume 3 – Content Profiles

There are four different categories of Audit Events in the context of the EPR:

- a. Document management (e.g. a document has been uploaded to the EPR of a patient or a list of document metadata has been retrieved)
- b. Policy management (e.g. a patient has given a healthcare professional access rights to his EPR)
- c. Access Patient Audit Record Repository by a patient or representative (a patient viewed the Audit Trail for the Audit Record Repository)
- d. Notification of the patient about the entry of healthcare professionals into a group

Each category is described as a content profile. These content profiles are based on the AuditEvent Resource, <http://hl7.org/fhir/R4/auditevent.html>.

The AuditEvent Resource has mapping rules to the DICOM audit message format, see FHIR Table 6.4.7.2, <http://hl7.org/fhir/R4/auditevent-mappings.html> which allows to map to ATNA.

#### 4.1 Audit Trail Consumption Event Types

The following Audit Trail Consumption Event Types are defined and SHALL be supported, see EprAuditTrailConsumptionEventTypes from Codesystem 2.16.756.5.30.1.127.3.10.7.

Type	Description	Profile Ref	Opt Community
ATC_DOC_CREATE	Document upload	4.2	R
ATC_DOC_READ	Document retrieval	4.2	R
ATC_DOC_UPDATE	Document or Document Metadata update	4.2	R
ATC_DOC_DELETE	Document removal	4.2	R
ATC_DOC_SEARCH	Document search	4.2	R
ATC_POL_CREATE_AUT_PART_AL	Authorize participants to access level/date	4.3	R, (NP: if not reference community)
ATC_POL_UPDATE_AUT_PART_AL	Update access level/date of authorized participants	4.3	R, (NP: if not reference community)
ATC_POL_REMOVE_AUT_PART_AL	Remove authorization for participants to access level/date	4.3	R, (NP: if not reference community)
ATC_POL_DEF_CONFLEVEL	Set or update the default Confidentiality Level for new documents	4.3	R, (NP: if not reference community)
ATC_POL_DIS_EMER_USE	Disabling Emergency Access	4.3	R, (NP: if not reference community)
ATC_POL_ENA_EMER_USE	Enabling Emergency Access	4.3	R, (NP: if not reference community)
ATC_POL_INCL_BLACKLIST	Assign a Healthcare Professional to Blacklist	4.3	R, (NP: if not reference community)
ATC_POL_EXL_BLACKLIST	Exclude a Healthcare Professional from Blacklist	4.3	R, (NP: if not reference community)
ATC_LOG_READ	Accessing the Patient Audit Record Repository	4.4	R
ATC_HPD_GROUP_ENTRY_NOTIFY	Entry of healthcare professionals into a group	4.6	R

Table 4: Audit Trail Consumption Event Types

## 4.2 Document Audit Event Content Profile

This content profile describes Audit Event related to Document Management. The following Data Elements shall be provided:

Data Element	Description	Property/Value
Event Type	Document upload Document retrieval Document or Document Metadata update Document removal Document search	
Event Date and Time		UTC
Participants		
Initiator	Patient	Name
	Representative of patient	Name UAP-ID or EPR-SPID
	Authorized Healthcare Professional	Name GLN
	Assistant of a Healthcare Professional	Name GLN
	Technical User	Name Identifier
	Document Administrator	Name UAP-ID
Responsible <sup>15</sup>	Patient	Name
	Healthcare Professional	Name GLN
Groups where Healthcare Professional is member		Name of Group OID
Purpose of Use		NORM, EMER, AUTO, DICOM_AUTO
Patient	Involved patient	EPR-SPID
Document <sup>16</sup>	type of document	typeCode <sup>17</sup> (SNOMED CT code)
	reference to document	uniqueId <sup>18</sup> repositoryUniqueid <sup>19</sup> homeCommunityID <sup>20</sup>
	title of document	title <sup>21</sup>

Table 5: Document Audit Event Data Elements

This profile defines the content of the document audit events which a community has to provide for a patient's audit trail. This profile builds on AuditEvent (<http://hl7.org/fhir/R4/auditevent.html>).

<sup>15</sup> If different from Initiator (Representative of patient acting on behalf of a patient then patient is responsible).

<sup>16</sup> Required for Document upload, Document retrieval, Document or Document Metadata update and Document removal but not for Document search.

<sup>17</sup> Annex 3 EPRO-FDHA, chapter 2.6 type of document (2.16.756.5.30.1.127.3.10.1.27).

<sup>18</sup> IHE IT Infrastructure (ITI) Technical Framework, Volume 3, Revision 19.0, June 17, 2022, chapter 4.2.3.2.26, DocumentEntry.uniqueId.

<sup>19</sup> IHE IT Infrastructure (ITI) Technical Framework, Volume 3, Revision 19.0, June 17, 2022, chapter 4.2.3.2.18, DocumentEntry.repositoryUniqueid.

<sup>20</sup> IHE IT Infrastructure (ITI) Technical Framework, Volume 3, Revision 19.0, June 17, 2022, chapter 4.2.3.2.12, DocumentEntry.homeCommunityId.

<sup>21</sup> IHE IT Infrastructure (ITI) Technical Framework, Volume 3, Revision 19.0, June 17, 2022, chapter 4.2.3.2.24, DocumentEntry.title.

Name	Flags	Card.	Type	Description & Constraints
AuditEvent	I	0..*	AuditEvent	Document Audit Trail Content Profile <b>ch-atc-dae-1:</b> subtype needs to be fixed to ValueSet DocumentAuditEventType
type		1..1	Coding	Type/identifier of event <b>Binding:</b> AuditEventID (extensible): Type of event.
Slices for subtype		1..*	Coding	More specific type/id for the event <b>Slice:</b> Unordered, Open by value:system
subtype:DocumentAuditEventType		1..1	Coding	DocumentAuditEventType <b>Binding:</b> DocumentAuditEventType (required): Document Audit Event Type
system		1..1	uri	Identity of the terminology system <b>Fixed Value:</b> urn:oid:2.16.756.5.30.1.127.3.10.7
recorded		1..1	instant	Time when the event was recorded
purposeOfEvent		1..1	CodeableConcept	The purposeOfUse of the event <b>Binding:</b> EprPurposeOfUse (required): EprPurposeOfUse
agent		1..*	BackboneElement	Participants
role		1..1	CodeableConcept	Agent role in the event <b>Binding:</b> EprParticipant (required): EprParticipant
who		0..1	Reference(PractitionerRole   Practitioner   Organization   Device   Patient   RelatedPerson)	Identifier of who
name		1..1	string	Human-meaningful name for the agent
requestor		1..1	boolean	Whether user is initiator
Slices for entity	I	0..*	BackboneElement	Data or objects used <b>Slice:</b> Unordered, Open by value:type.code, value:role.code <b>sev-1:</b> Either a name or a query (NOT both)
entity:Patient		1..1	BackboneElement	Patient
what				
identifier		1..1	Identifier	Patient Id (EPR-SPID)
system		1..1	uri	The namespace for the identifier value <b>Fixed Value:</b> urn:oid:2.16.756.5.30.1.127.3.10.3
type		1..1	Coding	Type of entity involved
code		1..1	code	Symbol in syntax defined by the system <b>Fixed Value: 1</b>
role		1..1	Coding	What role the entity played
code		1..1	code	Symbol in syntax defined by the system <b>Fixed Value: 1</b>
entity:Document		0..1	BackboneElement	Document
what				
identifier		1..1	Identifier	XSDDocumentEntry.uniqueId
type		1..1	Coding	Type of entity involved
code		1..1	code	Symbol in syntax defined by the system <b>Fixed Value: 2</b>
role		1..1	Coding	What role the entity played
code		1..1	code	Symbol in syntax defined by the system <b>Fixed Value: 3</b>
Slices for detail		0..*	BackboneElement	Additional Information about the entity <b>Slice:</b> Unordered, Open by value:type
detail:repositoryUniqueId		1..1	BackboneElement	repositoryUniqueId
type		1..1	string	Name of the property <b>Fixed Value:</b> Repository Unique Id
value		1..1	base64Binary	Property value
detail:homeCommunityID		1..1	BackboneElement	homeCommunityID
type		1..1	string	Name of the property <b>Fixed Value:</b> homeCommunityID
value		1..1	base64Binary	Property value
detail:EprDocumentTypeCode		1..1	BackboneElement	EprDocumentTypeCode
type		1..1	string	Name of the property <b>Fixed Value:</b> EprDocumentTypeCode
value		1..1	base64Binary	Property value
entity:Query		0..1	BackboneElement	Query
what				
identifier		1..1	Identifier	XSDQueryEntry.uniqueId
type		1..1	Coding	Type of entity involved
code		1..1	code	Symbol in syntax defined by the system <b>Fixed Value: 2</b>
role		1..1	Coding	What role the entity played
code		1..1	code	Symbol in syntax defined by the system <b>Fixed Value: 24</b>

Table 6: StructureDefinition for Document Audit Event Profile

The mapping from the Document Audit Event Resource to the Data Elements is as follows:

DocumentAuditEvent	CH:ATC Data Element/Property
AuditEvent	
subtype (DocumentAuditEventType)	Event Type
recorded	Event Date and Time
purposeOfEvent	PurposeOfUse
agent	Participants
role	role (PAT, HCP, ASS, REP, TCU, DADM, GRP)
who.identifier	Identifier if applicable
name	Name
requestor	if participant is Initiator
entity	
entity (Patient)	Patient
what.identifier	EPR-SPID
entity (Document)	Document
what.identifier	uniqueId
detail (repositoryUniqueid)	repositoryUniqueid
detail (homeCommunityID)	homeCommunityID
detail (EprDocumentTypeCode)	typeCode
detail (title)	title
entity (Query)	Query
what.identifier	Stored Query ID (UUID)

Table 7: Mapping Document Audit Event to Data Elements

#### 4.2.1 Example of a Document Audit Event: Document upload

Event	Upload
Resource title of Document	Upload
Resource: type of Document	Austrittsbericht von Julia Helfe-Gern
Resource: reference to Document	Nicht näher bezeichnetes Dokument (SOMED CT: 419891008))
Event Date and Time	uniqueID
Participant, Initiator	10.10.2020 18:29
Participant, Responsible	Julia Helfe-Gern representing Jakob Wieder-Gesund

Table 8: Uploading a Record Artifact by a patient representative (atc-doc-create-rep-pat.xml)

```
<AuditEvent xmlns="http://hl7.org/fhir">
  <id value="atc-doc-create-rep-pat"/>
  <meta>
    <profile value="http://fhir.ch/ig/ch-atc/StructureDefinition/DocumentAuditEvent" />
  </meta>
  <text>
    <status value="generated"/>
    <div xmlns="http://www.w3.org/1999/xhtml">Upload of Record Artifact 10.10.2020 18:29 from Julia Helfe-Gern on behalf of Jakob Wieder-Gesund
    </div>
  </text>
  <type>
    <system value="http://dicom.nema.org/resources/ontology/DCM"/>
    <code value="110106"/>
  </type>
</AuditEvent>
```

```
<display value="Export"/>
</type>
<subtype>
  <system value="urn:oid:2.16.756.5.30.1.127.3.10.7"/>
  <code value="ATC_DOC_CREATE"/>
  <display value="Document upload"/>
</subtype>
<action value="C"/>
<recorded value="2020-10-10T16:29:00Z"/>
<outcome value="0"/>
<purposeOfEvent>
  <coding>
    <system value="urn:oid:2.16.756.5.30.1.127.3.10.5"/>
    <code value="NORM"/>
    <display value="Normal Access"/>
  </coding>
</purposeOfEvent>
<agent>
  <role>
    <coding>
      <system value="urn:oid:2.16.756.5.30.1.127.3.10.6"/>
      <code value="PAT"/>
      <display value="Patient"/>
    </coding>
  </role>
  <name value="Jakob Wieder-Gesund" />
  <requestor value="false" />
</agent>
<agent>
  <role>
    <coding>
      <system value="urn:oid:2.16.756.5.30.1.127.3.10.6"/>
      <code value="REP"/>
      <display value="Representative"/>
    </coding>
  </role>
  <userId>
    <system value="urn:oid:2.16.756.5.30.1.127.3.10.3" />
    <value value="76132222222222222222" />
  </userId>
  <name value="Julia Hilfe Gern" />
  <requestor value="true" />
</agent>
<source>
  <identifier>
    <system value="urn:ietf:rfc:3986"/>
    <!-- oid of system generating this audit event -->
    <value value="urn:oid:7.8.9.10.11"/>
  </identifier>
</source>
<entity>
  <!-- Patient -->
  <what>
    <identifier>
      <system value="urn:oid:2.16.756.5.30.1.127.3.10.3" />
```

```

        <value value="761337610469261945" />
    </identifier>
</what>

<type>
    <system value=" http://terminology.hl7.org/CodeSystem /au-
dit-entity-type"/>
    <code value="1"/>
    <display value="Person"/>
</type>
<role>
    <system value=" http://terminology.hl7.org/CodeSystem /ob-
ject-role"/>
    <code value="1"/>
    <display value="Patient"/>
</role>
</entity>
<entity>
    <!-- Document -->
    <what>
        <identifier>
            <type>
                <coding>
                    <system value="urn:uuid:2e82clf6-a085-4c72-9da3-
8640a32e42ab"/>
                    <code value="IHE XDS Metadata"/>
                    <display value="XDSDocumentEntry.uniqueId"/>
                </coding>
            </type>
            <system value="urn:ietf:rhc:3986"/>
            <value value="urn:oid:1.2.3.4.5"/>
        </identifier>
    </what>
    <type>
        <system value=" http://terminology.hl7.org/CodeSystem /au-
dit-entity-type"/>
        <code value="2"/>
        <display value="System Object"/>
    </type>
    <role>
        <system value=" http://terminology.hl7.org/CodeSystem /ob-
ject-role"/>
        <code value="3"/>
        <display value="Report"/>
    </role>
    <detail>
        <type value="Repository Unique Id" />
        <value value="MS4yLjM=" />
        <!-- base64 of OID eg 1.2.3 == -->
    </detail>
    <detail>
        <type value="homeCommunityID" />
        <value value="NS42LjcuOA==" />
        <!-- base64 of OID URN homeCommunityId e.g. 5.6.7.8 -->
    </detail>

```



```

<detail>
  <type value="EprDocumentTypeCode" />
  <value value=" NDE5ODkxMDA4" />
  <!-- base64 typeCode 419891008 -->
</detail>
<detail>
  <type value="title"/>
  <valueBase64Binary val-ue="QXVzdHJpdHRzYmVyaWN-
odCB2b24gSnVsaWEgSGVsZmUtR2Vybg==" />
  <!-- base64 title Austrittsbericht von Julia Hilfe-Gern
-->
</detail>
</entity>
</AuditEvent>

```

Listing 1: Example of a document audit event

#### 4.2.2 Example of a Document Audit Event: Document search

Event	Search for documents
Event Date and Time	10.10.2020 18:49
Participant, Initiator	David Mustermann
Participant, Responsible	representing Dr. med. Sabine Musterfrau
Participant, Group	Kardiologie Universitätsspital Musterstadt
Purpose of event	Emergency Access

Table 9: Example of a Document Audit Event: Document search

```

<AuditEvent xmlns="http://hl7.org/fhir">
  <id value="atc-doc-search"/>
  <meta>
    <profile value="http://fhir.ch/ig/ch-atc/StructureDefini-
tion/DocumentAuditEvent" />
  </meta>
  <text>
    <status value="generated"/>
    <div xmlns="http://www.w3.org/1999/xhtml"> Search for docu-
ments 10.10.2022 18:49 Dr. med. Sabine Musterfrau requesting documents
in Emergency Access from Kardiologie Universitätsspital Musterstadt
    </div>
  </text>
  <type>
    <system value="http://dicom.nema.org/resources/ontology/DCM"/>
    <code value="110106"/>
    <display value="Export"/>
  </type>
  <subtype>
    <system value="urn:oid:2.16.756.5.30.1.127.3.10.7"/>
    <code value="ATC_DOC_SEARCH"/>
    <display value="Document search"/>
  </subtype>
  <action value="E"/>
  <recorded value="2022-10-10T18:49:00Z"/>
  <outcome value="0"/>
  <purposeOfEvent>
    <coding>
      <system value="urn:oid:2.16.756.5.30.1.127.3.10.5"/>
      <code value="EMER"/>
    </coding>
  </purposeOfEvent>
</AuditEvent>

```

```

        <display value="Emergency Access"/>
    </coding>
</purposeOfEvent>
<agent>
    <role>
        <coding>
            <system value="urn:oid:2.16.756.5.30.1.127.3.10.6"/>
            <code value="HCP"/>
            <display value="Healthcare professional"/>
        </coding>
    </role>
    <name value="Dr. med. Sabine Musterfrau" />
    <requestor value="true" />
</agent>
<agent>
    <role>
        <coding>
            <system value="urn:oid:2.16.756.5.30.1.127.3.10.14"/>
            <code value="GRP"/>
            <display value="Group"/>
        </coding>
    </role>
    <who>
        <identifier>
            <value value="urn:oid:1.1.1.1.1"/>
        </identifier>
    </who>
    <name value="Kardiologie Universitätsspital Musterstadt"/>
    <requestor value="false"/>
</agent>
<source>
    <observer>
        <identifier>
            <system value="urn:ietf:rhc:3986"/>
            <value value="urn:oid:7.8.9.10.11"/>
        </identifier>
    </observer>
</source>
<entity>
    <!-- Patient -->
    <what>
        <identifier>
            <system value="urn:oid:2.16.756.5.30.1.127.3.10.3" />
            <value value="761337610469261945" />
        </identifier>
    </what>
    <type>
        <system value="http://terminology.hl7.org/CodeSystem/audit-entity-type"/>
        <code value="1"/>
        <display value="Person"/>
    </type>
    <role>
        <system value="http://terminology.hl7.org/CodeSystem/object-role"/>

```

```
        <code value="1"/>
        <display value="Patient"/>
    </role>
</entity>
<entity>
    <!-- Query -->
    <what>
        <identifier>
            <system value="urn:ietf:rhc:3986" />
            <value value="urn:uuid:14d4debf-8f97-4251-9a74-
a90016b0af0d" />
            <!-- Stored Query Id: https://pro-
files.ihe.net/ITI/TF/Volume2/ITI-18.html#3.18.4.1.2.4 -->
        </identifier>
    </what>
    <type>
        <system value="http://terminology.hl7.org/CodeSystem/au-
dit-entity-type"/>
        <code value="2"/>
        <display value="System Object"/>
    </type>
    <role>
        <system value="http://terminology.hl7.org/CodeSystem/ob-
ject-role"/>
        <code value="24"/>
        <display value="Query"/>
    </role>
</entity>
</AuditEvent>
```

Listing 2: Example of a document audit event

### 4.3 Policy Audit Event Content Profile

This content profile describes Audit Events related to Policy Management. The following Data Elements shall be provided:

Data Element	Description	Property/Value
Event Type	Authorize participants to access level/date	
	Update access level/date of authorized participants	
	Remove authorization for participants to access level/date	
	Set or update the default Confidentiality Level for new documents	
	Disabling Emergency Access	
	Enabling Emergency Access	
	Assign a Healthcare Professional to Blacklist	
	Exclude a Healthcare Professional from Blacklist	
Event Date Time		UTC
Participants		
Initiator	Patient	Name
	Representative of patient	Name UAP-ID or EPR-SPID
	Authorized Healthcare Professional <sup>22</sup>	Name GLN
	Assistant of a Healthcare Professional <sup>7</sup>	Name GLN
	Policy Administrator	Name UAP-ID
Responsible	Patient	Name
	Healthcare Professional <sup>7</sup>	Name GLN
Patient	Involved patient	EPR-SPID
Resource	Resource Role	HCP, GRP or REP
	Healthcare Professional	Name GLN
	Group of Healthcare Professional	Name of Group OID
	Representative of patient	Name UAP-ID or EPR-SPID
	AccessLevel <sup>23</sup>	one of urn:e-health-suisse:2015:policies:access-level: normal, restricted, delegation-and-restricted, delegation-and-normal, full
	AccessLimitedToDate <sup>8</sup>	Date
	ProvideLevel <sup>24</sup>	one of urn:e-health-suisse:2015:policies:provide-level: normal, restricted, secret

Table 10: Policy Audit Event Data Elements

<sup>22</sup> Healthcare Professional or Assistant of Healthcare Professional can only be a participant for the first Event Type (Authorize participants to access level).

<sup>23</sup> Access Level and the date if the access is limited (AccessLimitedToDate) are required for the first two Event Types (Authorize, update Authorization participants to access level/date), for the other Event Types these parameters do not need to be specified.

<sup>24</sup> Provide Level is only relevant for the Event Type Default Confidentiality Level for new Documents.

This content profile defines the document audit events which a community has to provide for a patients audit trail. This profile builds on AuditEvent (<http://hl7.org/fhir/R4/auditevent.html>).

Name	Flags	Card.	Type	Description & Constraints
AuditEvent	I	0..*	AuditEvent	Policy Audit Trail Content Profile <b>ch-atc-pae-1:</b> subtype needs to be fixed to ValueSet PolicyAuditEventType
type		1..1	Coding	Type/identifier of event <b>Binding:</b> AuditEventID (extensible)
subtype		1..*	(Slice Definition)	More specific type/id for the event <b>Slice:</b> Unordered, Open by value:system
subtype:PolicyAuditEventType		1..1	Coding	PolicyAuditEventType <b>Binding:</b> PolicyAuditEventType (required)
system		1..1	uri	Identity of the terminology system <b>Fixed Value:</b> urn:oid:2.16.756.5.30.1.127.3.10.7
recorded		1..1	instant	Time when the event was recorded
agent		1..*	BackboneElement	Participants
role		1..1	CodeableConcept	Agent role in the event <b>Binding:</b> EprParticipant (required)
who		0..1	Reference(PractitionerRole   Practitioner   Organization   Device   Patient   RelatedPerson)	Identifier of who
name		1..1	string	Human-meaningful name for the agent
requestor		1..1	boolean	Whether user is initiator
entity	I	0..*	(Slice Definition)	Data or objects used <b>Slice:</b> Unordered, Open by value:type.code <b>sev-1:</b> Either a name or a query (NOT both)
entity:Patient		1..1	BackboneElement	Patient
what		1..1	Identifier	Patient Id (EPR-SPID)
system		1..1	uri	The namespace for the identifier value <b>Fixed Value:</b> urn:oid:2.16.756.5.30.1.127.3.10.3
type		1..1	Coding	Type of entity involved
code		1..1	code	Symbol in syntax defined by the system <b>Fixed Value:</b> 1
role		1..1	Coding	What role the entity played
code		1..1	code	Symbol in syntax defined by the system <b>Fixed Value:</b> 1
entity:Resource		0..1	BackboneElement	Resource (HCP, Group, Representative of Patient)
what		0..1	Identifier	Identifier. HCP (GLN), Group (OID)
type		1..1	Coding	Type of entity involved
code		1..1	code	Symbol in syntax defined by the system <b>Fixed Value:</b> 2
role		1..1	Coding	What role the entity played <b>Binding:</b> EprParticipant (required)
name	I	1..1	string	Descriptor for entity
detail		0..*	(Slice Definition)	Additional Information about the entity <b>Slice:</b> Unordered, Open by value:type
detail:AccessLevel		0..1	BackboneElement	AccessLevel if subtype is Create or Update
type		1..1	string	The type of extra detail provided in the value. <b>Fixed Value:</b> AccessLevel
value		1..1	base64Binary	one of urn:e-health-suisse:2015:policies:access-level: normal,restricted,delegation-and-restricted,delegation-and-normal or full
detail:AccessLimitedToDate		0..1	BackboneElement	AccessLimitedToDate if subtype is Create or Update
type		1..1	string	Name of the property <b>Fixed Value:</b> AccessLimitedToDate
value		1..1	base64Binary	date in Property value
detail:ProvideLevel		0..1	BackboneElement	ProvideLevel if subtype is ATC_POL_DEF_CONFLEVEL
type		1..1	string	Name of the property <b>Fixed Value:</b> ProvideLevel
value		1..1	base64Binary	one of urn:e-health-suisse:2015:policies:provide-level: normal, restricted or secret

Table 11: StructureDefinition for Policy Audit Event Profile

The mapping from the Document Audit Event Resource to the Data Elements is as follows:

PolicyAuditEvent	CH:ATC Data Element/Property
AuditEvent	
subtype (PolicyAuditEventType)	Event Type
recorded	Event Date and Time
agent	Participants
role	role (PAT, HCP, ASS, REP, GRP, PADM)
who.identifier	Identifier if applicable
name	Name
requestor	if participant is Initiator
entity	
entity (Patient)	Patient
what.identifier	EPR-SPID
entity (Resource)	Resource
what.identifier	Identifier: GLN for HCP, OID for Group
role	Role (HCP, REP, GRP)
name	Name of HCP, Group or Representative of Patient
detail (AccessLevel)	AccessLevel
detail (AccessLimitedToDate)	AccessLimitedToDate
detail (ProvideLevel)	ProvideLevel

Table 12: Mapping Policy Audit Event to Data Elements

#### 4.3.1 Examples

Event Resource: HCP	Create EPR-Access Level "delegation-and-restricted" till 31.12.2020 08:00 to Dr. med. Hans Allzeitbereit
Event Date and Time	22.09.2020 09:47
Participant Initiator	Jakob Wieder-Gesund

Table 13: Example Create Delegation and Restricted access for a healthcare professional (atc-pol-create-acc-right.xml)

```
<AuditEvent xmlns="http://hl7.org/fhir">
  <id value="atc-pol-create-acc-right"/>
  <meta>
    <profile value="http://fhir.ch/ig/ch-atc/StructureDefinition/PolicyAuditEvent" />
  </meta>
  <text>
    <status value="generated"/>
    <div xmlns="http://www.w3.org/1999/xhtml">22.09.2020 09:47:
    Jakob Wieder-Gesund created Access Level delegation-and-restricted
    till 31.12.2020 08:00 to Dr. med. Hans Allzeitbereit
    </div>
  </text>
  <type>
    <system value="http://dicom.nema.org/resources/ontology/DCM"/>
    <code value="110106"/>
    <display value="Export"/>
  </type>
  <subtype>
```

```
<system value="urn:oid:2.16.756.5.30.1.127.3.10.7"/>
<code value="ATC_POL_CREATE_AUT_PART_AL"/>
<display value="Authorize participants to access level/date"/>
</subtype>
<action value="C"/>
<recorded value="2020-10-09T07:47:00Z"/>
<outcome value="0"/>
<agent>
  <role>
    <coding>
      <system value="urn:oid:2.16.756.5.30.1.127.3.10.6"/>
      <code value="PAT"/>
      <display value="Patient"/>
    </coding>
  </role>
  <name value="Jakob Wieder-Gesund" />
  <requestor value="true" />
</agent>
<source>
  <identifier>
    <system value="urn:ietf:rhc:3986"/>
    <!-- oid of system generating this audit event -->
    <value value="urn:oid:7.8.9.10.12"/>
  </identifier>
</source>
<entity>
  <!-- Patient -->
  <what>
    <identifier>
      <system value="urn:oid:2.16.756.5.30.1.127.3.10.3" />
      <value value="761337610469261945" />
    </identifier>
  </what>
  <type>
    <system value=" http://terminology.hl7.org/CodeSystem /audit-entity-type"/>
    <code value="1"/>
    <display value="Person"/>
  </type>
  <role>
    <system value=" http://terminology.hl7.org/CodeSystem /object-role"/>
    <code value="1"/>
    <display value="Patient"/>
  </role>
</entity>
<entity>
  <!-- Resource -->
  <what>
    <identifier>
      <system value="urn:oid:2.51.1.3" />
      <value value="7601000234438" />
    </identifier>
  </what>
  <type>
```

```

        <system value="http://terminology.hl7.org/CodeSystem/object-type"/>
        <code value="2"/>
        <display value="System Object"/>
    </type>
    <role>
        <system value="urn:oid:2.16.756.5.30.1.127.3.10.6"/>
        <code value="HCP"/>
        <display value="Healthcare professional"/>
    </role>
    <name value="Dr. med. Hans Allzeitbereit" />
    <detail>
        <type value="AccessLevel" />
        <value value="dXJuOmUtaGVhbHRoLXNlaXNzZToyMDE1OnBvbGljaWV-
zOmFjY2Vzcy1sZXZlbDpkZWxlZ2F0aW9uLWFuZClyZXN0cm1jdGVk" />
        <!-- base64 of urn:e-health-suisse:2015:policies:access-
level:delegation-and-restricted -->
    </detail>
    <detail>
        <type value="AccessLimitedToDate" />
        <value value="MjAyMC0xMi0zMVQwODowMDowMFo=" />
        <!-- base64 of 2020-12-31-->
    </detail>
</entity>
</AuditEvent>

```

Listing 3: Example of a create delegation and restricted access for a healthcare professional audit event

Event	Create
Resource: Representative	Julia Helfe Gern
Event Date and Time	22.09.2020 09:48
Participant Initiator	Jakob Wieder-Gesund

Table 14: Example Create for a representative (atc-pol-create-rep.xml)atc-pol-create-acc-right.xml

```

<AuditEvent xmlns="http://hl7.org/fhir">
  <id value="atc-pol-create-rep"/>
  <meta>
    <profile value="http://fhir.ch/ig/ch-atc/StructureDefinition/PolicyAuditEvent" />
  </meta>
  <text>
    <status value="generated"/>
    <div xmlns="http://www.w3.org/1999/xhtml">22.09.2020 09:48:
Jakob Wieder-Gesund authorized Julia Helfe Gern as a representative
    </div>
  </text>
  <type>
    <system value="http://dicom.nema.org/resources/ontology/DCM"/>
    <code value="110106"/>
    <display value="Export"/>
  </type>
  <subtype>
    <system value="urn:oid:2.16.756.5.30.1.127.3.10.7"/>
    <code value="ATC_POL_CREATE_AUT_PART_AL"/>
    <display value="Authorize participants to access level/date"/>
  </subtype>
</AuditEvent>

```



```
</subtype>
<action value="C"/>
<recorded value="2020-10-09T07:48:00Z"/>
<outcome value="0"/>
<agent>
  <role>
    <coding>
      <system value="urn:oid:2.16.756.5.30.1.127.3.10.6"/>
      <code value="PAT"/>
      <display value="Patient"/>
    </coding>
  </role>
  <name value="Jakob Wieder-Gesund" />
  <requestor value="true" />
</agent>
<source>
  <identifier>
    <system value="urn:ietf:rhc:3986"/>
    <!-- oid of system generating this audit event -->
    <value value="urn:oid:7.8.9.10.12"/>
  </identifier>
</source>
<entity>
  <!-- Patient -->
  <what>
    <identifier>
      <system value="urn:oid:2.16.756.5.30.1.127.3.10.3" />
      <value value="761337610469261945" />
    </identifier>
  </what>
  <type>
    <system value=" http://terminology.hl7.org/CodeSystem /audit-entity-type"/>
    <code value="1"/>
    <display value="Person"/>
  </type>
  <role>
    <system value=" http://terminology.hl7.org/CodeSystem /object-role"/>
    <code value="1"/>
    <display value="Patient"/>
  </role>
</entity>
<entity>
  <!-- Resource -->
  <type>
    <system value="http://hl7.org/fhir/object-type"/>
    <code value="2"/>
    <display value="System Object"/>
  </type>
  <role>
    <system value="urn:oid:2.16.756.5.30.1.127.3.10.6"/>
    <code value="REP"/>
    <display value="Representative"/>
  </role>
</entity>
```

```

    <name value="Julia Helfe Gern" />
  </entity>
</AuditEvent>

```

Listing 4: Example of a create for a representative audit event

#### 4.4 Access Audit Trail Content Profile

This content profile describes Audit Event related to Accessing the Audit Trail of a Patient from a Patient Audit Record Repository. The following Data Elements shall be provided:

Data Element	Description	Property/Value
Event Type		Access Audit Trail
Event Date and Time		UTC
Participants		
Initiator	Patient	Name
	Representative of patient	Name UAP-ID or EPR_SPID
Responsible	Patient	Name
Patient	Involved patient	EPR-SPID

Table 15: Access Audit Trail Data Elements

This content profile defines the access audit trail event, which a community has to provide for a patient’s audit trail. This profile builds on AuditEvent (<http://hl7.org/fhir/R4/auditevent.html>).

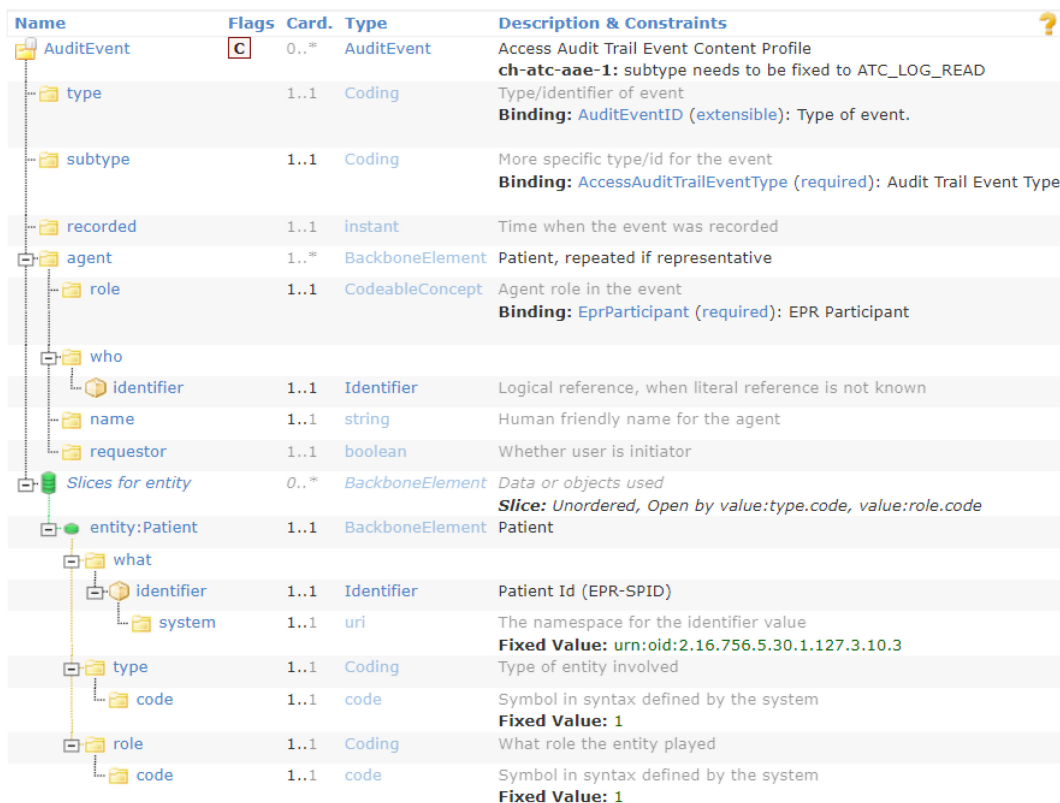


Table 16: StructureDefinition for Access Audit Trail Event Profile

The mapping from the Access Audit Trail Event Resource to the Data Elements is as follows:

AccessAuditTrailEvent	CH:ATC Data Element/Property
AuditEvent	
subtype (AccessAuditTrailEventType)	Event Type
recorded	Event Date and Time
agent	Participants
role	role (PAT, REP)
who.identifier	Identifier if applicable
name	Name
requestor	if participant is Initiator
entity	
entity (Patient)	Patient
what.identifier	EPR-SPID

Table 17: Mapping Access Audit Trail Event to Data Elements

#### 4.4.1 Example

Event	Access Audit Trail
Patient	Jakob Wieder-Gesund
Timestamp	22.09.2020 10:47
Participant	Jakob Wieder-Gesund

Table 18: Example Log Access (atc-log-read.xml)

```
<AuditEvent xmlns="http://hl7.org/fhir">
  <id value="atc-log-read"/>
  <meta>
    <profile value="http://fhir.ch/ig/ch-atc/StructureDefinition/AccessAuditTrailEvent" />
  </meta>
  <text>
    <status value="generated"/>
    <div xmlns="http://www.w3.org/1999/xhtml">Jakob Wieder-Gesund
has viewed the audit trail 22.09.2020 10:47
</div>
  </text>
  <type>
    <system value="http://dicom.nema.org/resources/ontology/DCM"/>
    <code value="110106"/>
    <display value="Export"/>
  </type>
  <subtype>
    <system value="urn:oid:2.16.756.5.30.1.127.3.10.7"/>
    <code value="ATC_LOG_READ"/>
    <display value="Accessing the Patient Audit Record Repository"/>
  </subtype>
  <action value="C"/>
  <recorded value="2020-09-22T08:47:00Z"/>
  <outcome value="0"/>
</AuditEvent>
```

```
<agent>
  <role>
    <coding>
      <system value="urn:oid:2.16.756.5.30.1.127.3.10.6"/>
      <code value="PAT"/>
      <display value="Patient"/>
    </coding>
  </role>
  <name value="Jakob Wieder-Gesund" />
  <requestor value="true" />
</agent>
<source>
  <identifier>
    <system value="urn:ietf:rhc:3986"/>
    <!-- oid of system generating this audit event -->
    <value value="urn:oid:7.8.9.10.11"/>
  </identifier>
</source>
<entity>
  <!-- Patient -->
  <what>
    <identifier>
      <system value="urn:oid:2.16.756.5.30.1.127.3.10.3" />
      <value value="761337610469261945" />
    </identifier>
  </what>
  <type>
    <system value="http://terminology.hl7.org/CodeSystem/audit-entity-type"/>
    <code value="1"/>
    <display value="Person"/>
  </type>
  <role>
    <system value="http://terminology.hl7.org/CodeSystem/object-role"/>
    <code value="1"/>
    <display value="Patient"/>
  </role>
</entity>
</AuditEvent>
```

Listing 5: Example of a log access audit event

#### 4.5 HPD Group Entry Audit Event Content Profile

This content profile describe the Audit Event related to the entry of a healthcare professional into a HPD group for which the patient is notified. The following Data Elements shall be provided:

Data Element	Description	Property/Value
Event Type	Patient notified of Healthcare Professionals added to a group	
Event Date and Time		UTC
Notification Service		Name
Patient	Notified patient	EPR-SPID
Healthcare Professionals	Healthcare professionals	Name GLN
Group	Group where Healthcare Professionals are added as members	Name of Group OID

Table 19: HPD Group Entry Audit Event Elements

This profile defines the content of the HPD group entry audit event. This profile builds on AuditEvent (<http://hl7.org/fhir/R4/auditevent.html>).

Name	Flags	Card.	Type	Description & Constraints
AuditEvent	C	0..*	AuditEvent	HPD Audit Trail Content Profile <b>ch-atc-pae-1:</b> subtype needs to be fixed to ValueSet HpdAuditEventType
type		1..1	Coding	Type/identifier of event <b>Binding:</b> AuditEventID (extensible): Type of event.
Slices for subtype		1..*	Coding	More specific type/id for the event <b>Slice:</b> Unordered, Open by value:system
subtype:HpdAuditEventType		1..1	Coding	HPD Audit Event Type <b>Binding:</b> HpdAuditEventType (required): HPD Audit Event Type
system		1..1	uri	Identity of the terminology system <b>Fixed Value:</b> urn:oid:2.16.756.5.30.1.127.3.10.7
recorded		1..1	instant	Time when the event was recorded
agent		1..1	BackboneElement	Notification service
who				
identifier		1..1	Identifier	Logical reference, when literal reference is not known
name		1..1	string	Name of notification service
requestor		1..1	boolean	Whether user is initiator
Slices for entity		0..*	BackboneElement	Data or objects used <b>Slice:</b> Unordered, Open by value:role.code
entity:Patient		1..1	BackboneElement	Patient
what				
identifier		1..1	Identifier	Patient Id (EPR-SPID)
system		1..1	uri	The namespace for the identifier value <b>Fixed Value:</b> urn:oid:2.16.756.5.30.1.127.3.10.3
type		1..1	Coding	Type of entity involved
code		1..1	code	Symbol in syntax defined by the system <b>Fixed Value:</b> 1
role		1..1	Coding	What role the entity played
code		1..1	code	Symbol in syntax defined by the system <b>Fixed Value:</b> 1
entity:HealthcareProfessional		1..*	BackboneElement	Healthcare professional (HCP)
what				
identifier		1..1	Identifier	Identifier: HCP (GLN)
system		1..1	uri	The namespace for the identifier value <b>Fixed Value:</b> urn:oid:2.51.1.3
type		1..1	Coding	Type of entity involved
code		1..1	code	Symbol in syntax defined by the system <b>Fixed Value:</b> 1
role		1..1	Coding	What role the entity played
system		1..1	uri	Identity of the terminology system <b>Fixed Value:</b> urn:oid:2.16.756.5.30.1.127.3.10.6
code		1..1	code	Symbol in syntax defined by the system <b>Fixed Value:</b> HCP
name		1..1	string	Healthcare professional name
entity:Group		1..1	BackboneElement	Group
what				
identifier		1..1	Identifier	Identifier for Group (OID)
type		1..1	Coding	Type of entity involved
code		1..1	code	Symbol in syntax defined by the system <b>Fixed Value:</b> 3
role		1..1	Coding	What role the entity played
system		1..1	uri	Identity of the terminology system <b>Fixed Value:</b> urn:oid:2.16.756.5.30.1.127.3.10.14
code		1..1	code	Symbol in syntax defined by the system <b>Fixed Value:</b> GRP
name		1..1	string	Group name

Table 20: StructureDefinition for HPD Group Entry Audit Event Content Profile

The mapping from the HPD Group Entry Audit Event Resource to the Data Elements is as follows:

HpdAuditEvent	CH:ATC Data Element/Property
AuditEvent	
subtype (HpdAuditEventType)	Event Type
recorded	Event Date and Time
agent	Notification service
who.identifier	Identifier if applicable
name	Name
requestor	If notification service is Initiator
entity	
entity (Patient)	Patient
what.identifier	EPR-SPID
entity (HealthcareProfessional)	Healthcare Professional
what.identifier	Identifier for HCP (GLN)
name	Name of HCP
entity (Group)	Group
what.identifier	Group OID
name	Name of Group

Table 21: Mapping HPD Group Entry Audit Event to Data Elements

#### 4.5.1 Example

Event Healthcare professionals Timestamp Participant, Group Patient	Group entry of healthcare professional: Dr. med. Sabine Musterfrau 10.10.2020 10:05 Kardiologie Universitätsspital Musterstadt Jakob Wieder-Gesund
---	--

Table 22: Example group entry of healthcare professionals

```
<AuditEvent xmlns="http://hl7.org/fhir">
  <id value="atc-hpd-group-entry-notify"/>
  <meta>
    <profile value="http://fhir.ch/ig/ch-atc/StructureDefinition/HpdAuditEvent" />
  </meta>
  <text>
    <status value="generated"/>
    <div xmlns="http://www.w3.org/1999/xhtml">
      10.10.2020 10:05: Healthcare professional Dr. med. Sabine
      Musterfrau has been added to Group Kardiologie Universitätsspital Mus-
      terstadt and patient Jakob Wieder-Gesund has been notified
    </div>
  </text>
  <type>
    <system value="http://dicom.nema.org/resources/ontology/DCM"/>
    <code value="110106"/>
    <display value="Export"/>
  </type>
</AuditEvent>
```

```

</type>
<subtype>
  <system value="urn:oid:2.16.756.5.30.1.127.3.10.7"/>
  <code value="ATC_HPD_GROUP_ENTRY_NOTIFY"/>
  <display value="HPD Group Entry Notification"/>
</subtype>
<action value="C"/>
<recorded value="2022-10-10T10:05:00Z"/>
<outcome value="0"/>
<agent>      <name value="Notifikations-Dienst" />
  <requestor value="false" />
</agent>
<source>
  <observer>
    <identifier>
      <system value="urn:ietf:rhc:3986"/>
      <value value="urn:oid:7.8.9.10.11"/>
    </identifier>
  </observer>
</source>
<entity>
  <!-- Patient -->
  <what>
    <identifier>
      <system value="urn:oid:2.16.756.5.30.1.127.3.10.3" />
      <value value="761337610469261945" />
    </identifier>
  </what>
  <type>
    <system value="http://terminology.hl7.org/CodeSystem/audit-entity-type"/>
    <code value="1"/>
    <display value="Person"/>
  </type>
  <role>
    <system value="http://terminology.hl7.org/CodeSystem/object-role"/>
    <code value="1"/>
    <display value="Patient"/>
  </role>
</entity>
<entity>
  <!-- Healthcare professional -->
  <what>
    <identifier>
      <system value="urn:oid:2.51.1.3"/>
      <value value="7601000050717"/>
    </identifier>
  </what>
  <type>
    <system value="http://terminology.hl7.org/CodeSystem/audit-entity-type"/>
    <code value="1"/>
    <display value="Person"/>
  </type>

```



```
<role>
  <system value="urn:oid:2.16.756.5.30.1.127.3.10.6"/>
  <code value="HCP"/>
  <display value="Healthcare professional"/>
</role>
<name value="Dr. med. Sabine Musterfrau"/>
</entity>
<entity>
  <!-- Group Entry -->
  <what>
    <identifier>
      <value value="urn:oid:1.1.1.1.1"/>
    </identifier>
  </what>
  <type>
    <system value="http://terminology.hl7.org/CodeSystem/audit-entity-type"/>
    <code value="3"/>
  </type>
  <role>
    <system value="urn:oid:2.16.756.5.30.1.127.3.10.14"/>
    <code value="GRP"/>
  </role>
  <name value="Kardiologie Universitätsspital Musterstadt"/>
</entity>
</AuditEvent>
```

Listing 6: Example of a HPD group entry audit event

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