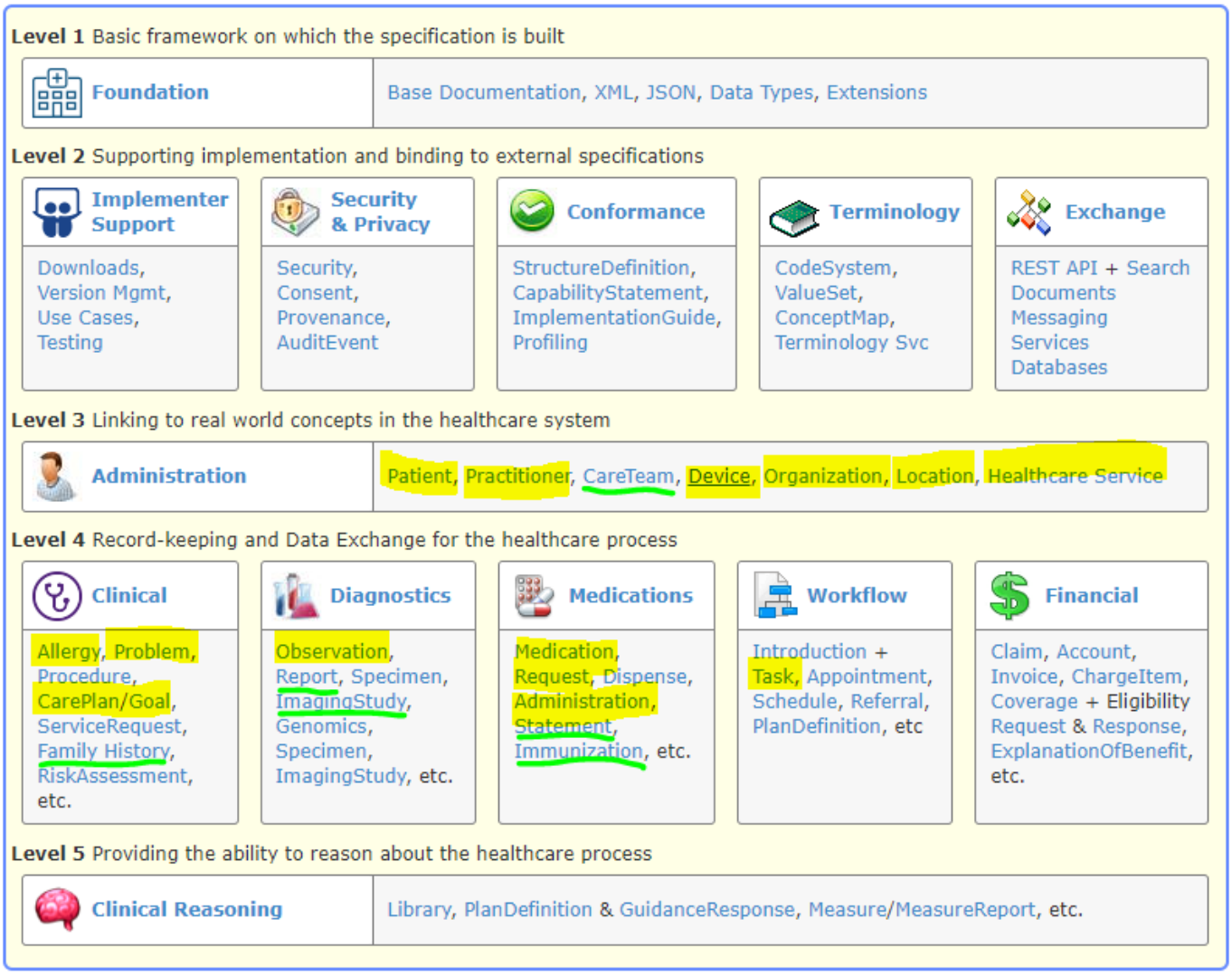
FHIR - Itel Scope

Fatti salvi i concetti dei livelli 1 e 2, sui quali i livelli superiori poggiano diffusamente, lo scope di I-Tel e' al momento focalizzato sui seguenti concetti di livello 3 e 4 (e alcuni concetti ad essi correlati, che verranno esaminati mano a mano che si scenderà' ad un maggiore livello di dettaglio).

Nota: sono stati **evidenziati in giallo i concetti centrali** e sottolineati in verde i concetti secondari ma comunque di interesse.



Domini di riferimento

Nel seguito si evidenziano i principali concetti rilevanti per l'Applicazione SmartEven, dando un (possibile) mapping sul relativo concetto FHIR ove noto.

- **Anagrafica**: memorizzazione delle informazioni relative alle entita' di dominio
  - Patient: entita' di dominio che corrisponde tipicamente ad un utente lato app
  - Practitioner: operatore sanitario in generale, corrisponde tipicamente ad un utente lato cruscotto di monitoraggio (applicazione web), tipicamente un Infermiere o un Medico
  - Device: dispositivi elettromedicali che possono essere in dotazione al paziente e con i quali puo' effettuare le misurazioni come prescritto dal CarePlan. Per alcuni e' supportata l'integrazione automatica delle misurazioni (tipicamente tramite interazione punto - punto tra Device e Smartphone del Paziente tramite Bluetooth), altrimenti e' previsto l'invio manuale
  - Medication: farmaci che possono essere assunti dal paziente come specificato dal CarePlan
  - Organization, Location, Healthcare Service: dati sul cliente, sulle singole Strutture gestite/di proprieta' del cliente e/o sui servizi offerti dal cliente ai Pazienti
- **Piano di Assistenza Individuale (PAI)**: il CarePlan del Paziente, in base al quale:
  - il sistema invia promemoria per ricordare che le Attivita' previste devono essere svolte

        - ad esempio una Attivita' potrebbe essere programmata tutti i giorni alle 10:00 e alle 20:00
    - il Paziente dovrebbe inviare un feedback quando effettua l'attivita' (se ha svolto l'attivita' ed eventualmente il risultato, come nel caso delle misurazioni)
    - attualmente vengono gestiti tre diversi tipi di Attivita' (mappati su relativi reference o detail.kind):
        - Assunzioni: il Paziente deve assumere un farmaco (MedicationRequest)
        - Misurazioni: il Paziente deve acquisire una misurazione tramite un Device (DeviceRequest)
        - Altre Attivita': compiti generici non mappabili nei precedenti, es. fare attivita' motoria (Task)
- **Monitoraggio/Allarmi**: il fine principale della piattaforma (oltre che dare ai Pazienti un modo comodo per seguire il CarePlan) e' consentire agli operatori (Infermieri e Medici) di monitorare:
    - l'aderenza dei Pazienti al CarePlan: sapere se Assunzioni (MedicationAdministration) e Altre Attivita' sono state effettuate, possibilmente nelle fasce orarie stabilite
    - l'andamento dei parametri rilevanti per il paziente: possibilita' di avere degli Allarmi (Problem) quando una Misurazione e' al di fuori delle soglie stabilite per quel parametro (gli allarmi devono essere poi gestiti da un Operatore che si assicuri che non si tratti semplicemente di una misurazione sbagliata)

Concetti Principali

Patient

Name	Flags	Card.	Type	Description & Constraints
Patient	N		DomainResource	Information about an individual or animal receiving health care services Elements defined in Ancestors: id, meta, implicitRules, language, text, contained, extension, modifierExtension
identifier	Σ	0..*	Identifier	An identifier for this patient
active	?! Σ	0..1	boolean	Whether this patient's record is in active use
name	Σ	0..*	HumanName	A name associated with the patient
telecom	Σ	0..*	ContactPoint	A contact detail for the individual
gender	Σ	0..1	code	male | female | other | unknown AdministrativeGender (Required)
birthDate	Σ	0..1	date	The date of birth for the individual
deceased[x]	?! Σ	0..1		Indicates if the individual is deceased or not
deceasedBoolean			boolean	
deceasedDateTime			dateTime	
address	Σ	0..*	Address	An address for the individual
maritalStatus		0..1	CodeableConcept	Marital (civil) status of a patient MaritalStatus (Extensible)
multipleBirth[x]		0..1		Whether patient is part of a multiple birth
multipleBirthBoolean			boolean	
multipleBirthInteger			integer	
photo		0..*	Attachment	Image of the patient
contact	I	0..*	BackboneElement	A contact party (e.g. guardian, partner, friend) for the patient *+ Rule: SHALL at least contain a contact's details or a reference to an organization*
relationship		0..*	CodeableConcept	The kind of relationship Patient Contact Relationship (Extensible)
name		0..1	HumanName	A name associated with the contact person
telecom		0..*	ContactPoint	A contact detail for the person
address		0..1	Address	Address for the contact person
gender		0..1	code	male | female | other | unknown AdministrativeGender (Required)
organization	I	0..1	Reference(Organization)	Organization that is associated with the contact
period		0..1	Period	The period during which this contact person or organization is valid to be contacted relating to this patient
communication		0..*	BackboneElement	A language which may be used to communicate with the patient about his or her health
language		1..1	CodeableConcept	The language which can be used to communicate with the patient about his or her health Common Languages (Preferred but limited to AllLanguages)
preferred		0..1	boolean	Language preference indicator
generalPractitioner		0..*	Reference(Organization | Practitioner | PractitionerRole)	Patient's nominated primary care provider
managingOrganization	Σ	0..1	Reference(Organization)	Organization that is the custodian of the patient record
link	?! Σ	0..*	BackboneElement	Link to another patient resource that concerns the same actual person
other	Σ	1..1	Reference(Patient | RelatedPerson)	The other patient or related person resource that the link refers to
type	Σ	1..1	code	replaced-by | replaces | refer | seealso LinkType (Required)

CarePlan

Name	Flags	Card.	Type	Description & Constraints
CarePlan	TU		DomainResource	Healthcare plan for patient or group Elements defined in Ancestors: id, meta, implicitRules, language, text, contained, extension, modifierExtension
identifier	Σ	0..*	Identifier	External Ids for this plan
instantiatesCanonical	Σ	0..*	canonical(PlanDefinition | Questionnaire | Measure | ActivityDefinition | OperationDefinition)	Instantiates FHIR protocol or definition
instantiatesUri	Σ	0..*	uri	Instantiates external protocol or definition
basedOn	Σ	0..*	Reference(CarePlan)	Fulfills CarePlan
replaces	Σ	0..*	Reference(CarePlan)	CarePlan replaced by this CarePlan
partOf	Σ	0..*	Reference(CarePlan)	Part of referenced CarePlan
status	?! Σ	1..1	code	draft | active | on-hold | revoked | completed | entered-in-error | unknown RequestStatus (Required)
intent	?! Σ	1..1	code	proposal | plan | order | option Care Plan Intent (Required)
category	Σ	0..*	CodeableConcept	Type of plan Care Plan Category (Example)
title	Σ	0..1	string	Human-friendly name for the care plan
description	Σ	0..1	string	Summary of nature of plan
subject	Σ	1..1	Reference(Patient | Group)	Who the care plan is for
encounter	Σ	0..1	Reference(Encounter)	Encounter created as part of
period	Σ	0..1	Period	Time period plan covers
created	Σ	0..1	dateTime	Date record was first recorded
author	Σ	0..1	Reference(Patient | Practitioner | PractitionerRole | Device | RelatedPerson | Organization | CareTeam)	Who is the designated responsible party
contributor		0..*	Reference(Patient | Practitioner | PractitionerRole | Device | RelatedPerson | Organization | CareTeam)	Who provided the content of the care plan
careTeam		0..*	Reference(CareTeam)	Who's involved in plan?
addresses	Σ	0..*	Reference(Condition)	Health issues this plan addresses
supportingInfo		0..*	Reference(Any)	Information considered as part of plan
goal		0..*	Reference(Goal)	Desired outcome of plan

activity	I	0..*	BackboneElement	Action to occur as part of plan *+ Rule: Provide a reference or detail, not both*
outcomeCodeableConcept		0..*	CodeableConcept	Results of the activity Care Plan Activity Outcome (Example)
outcomeReference		0..*	Reference(Any)	Appointment, Encounter, Procedure, etc.
progress		0..*	Annotation	Comments about the activity status/progress
reference	I	0..1	Reference(Appointment | CommunicationRequest | DeviceRequest | MedicationRequest | NutritionOrder | Task | ServiceRequest | VisionPrescription | RequestGroup)	Activity details defined in specific resource
detail	I	0..1	BackboneElement	In-line definition of activity
kind		0..1	code	Appointment | CommunicationRequest | DeviceRequest | MedicationRequest | NutritionOrder | Task | ServiceRequest | VisionPrescription Care Plan Activity Kind (Required)
instantiatesCanonical		0..*	canonical(PlanDefinition | ActivityDefinition | Questionnaire | Measure | OperationDefinition)	Instantiates FHIR protocol or definition
instantiatesUri		0..*	uri	Instantiates external protocol or definition
code		0..1	CodeableConcept	Detail type of activity Procedure Codes (SNOMED CT) (Example)
reasonCode		0..*	CodeableConcept	Why activity should be done or why activity was prohibited SNOMED CT Clinical Findings (Example)
reasonReference		0..*	Reference(Condition | Observation | DiagnosticReport | DocumentReference)	Why activity is needed
goal		0..*	Reference(Goal)	Goals this activity relates to
status	?!	1..1	code	not-started | scheduled | in-progress | on-hold | completed | cancelled | stopped | unknown | entered-in-error CarePlanActivityStatus (Required)
statusReason		0..1	CodeableConcept	Reason for current status
doNotPerform	?!	0..1	boolean	If true, activity is prohibiting action
scheduled[x]		0..1		When activity is to occur
scheduledTiming			Timing	
scheduledPeriod			Period	
scheduledString			string	
location		0..1	Reference(Location)	Where it should happen
performer		0..*	Reference(Practitioner | PractitionerRole | Organization | RelatedPerson | Patient | CareTeam | HealthcareService | Device)	Who will be responsible?
product[x]		0..1		What is to be administered/supplied SNOMED CT Medication Codes (Example)
productCodeableConcept			CodeableConcept	
productReference			Reference(Medication | Substance)	
dailyAmount		0..1	SimpleQuantity	How to consume/day?
quantity		0..1	SimpleQuantity	How much to administer/supply/consume
description		0..1	string	Extra info describing activity to perform
note		0..*	Annotation	Comments about the plan