



# What are FHIR Obligations, the evolution of Must Support

Dec 2, 2025 – Ward Weistra

HL7 Europe WGM



# Who am I?

Ward Weistra

- Product lead at **Firely**
- Head of programming for FHIR DevDays at **Firely**
- Member of the FHIR Management Group at HL7 **International**

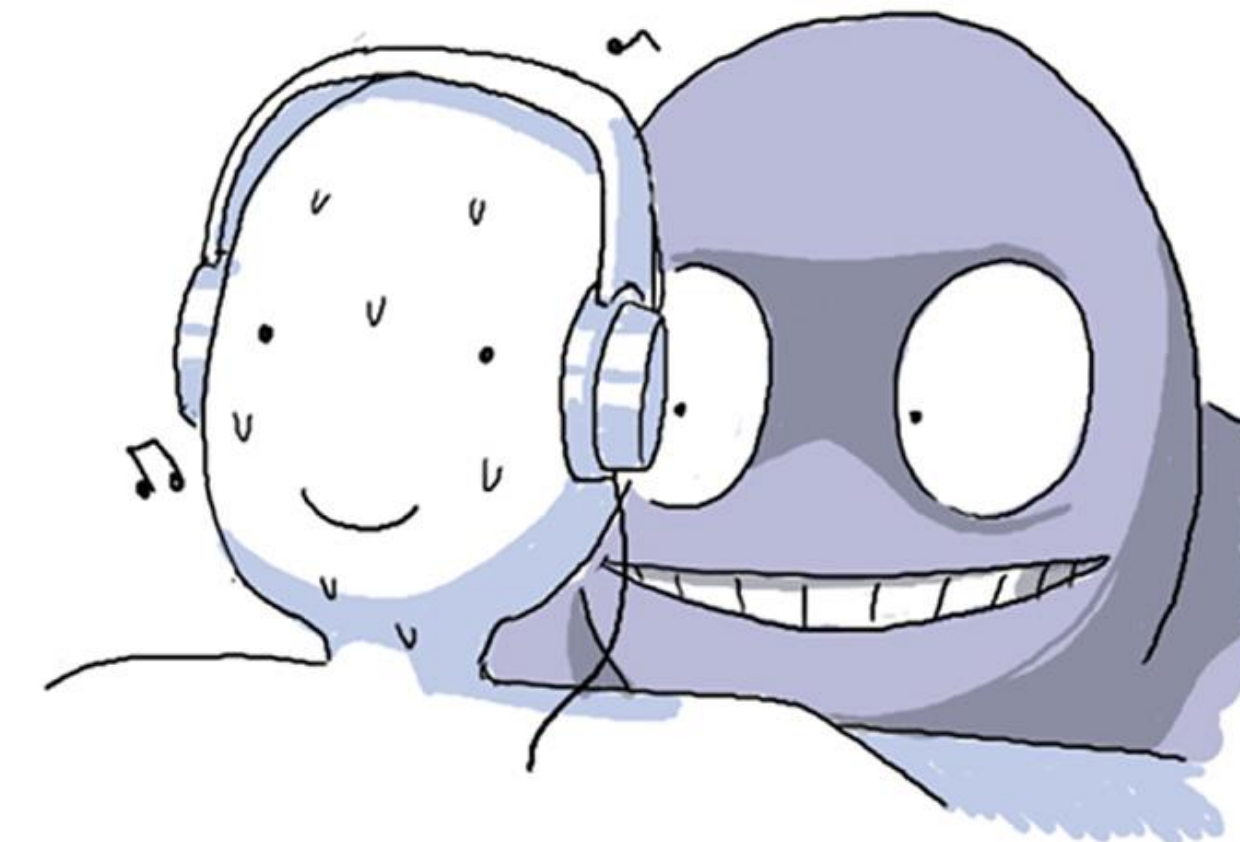
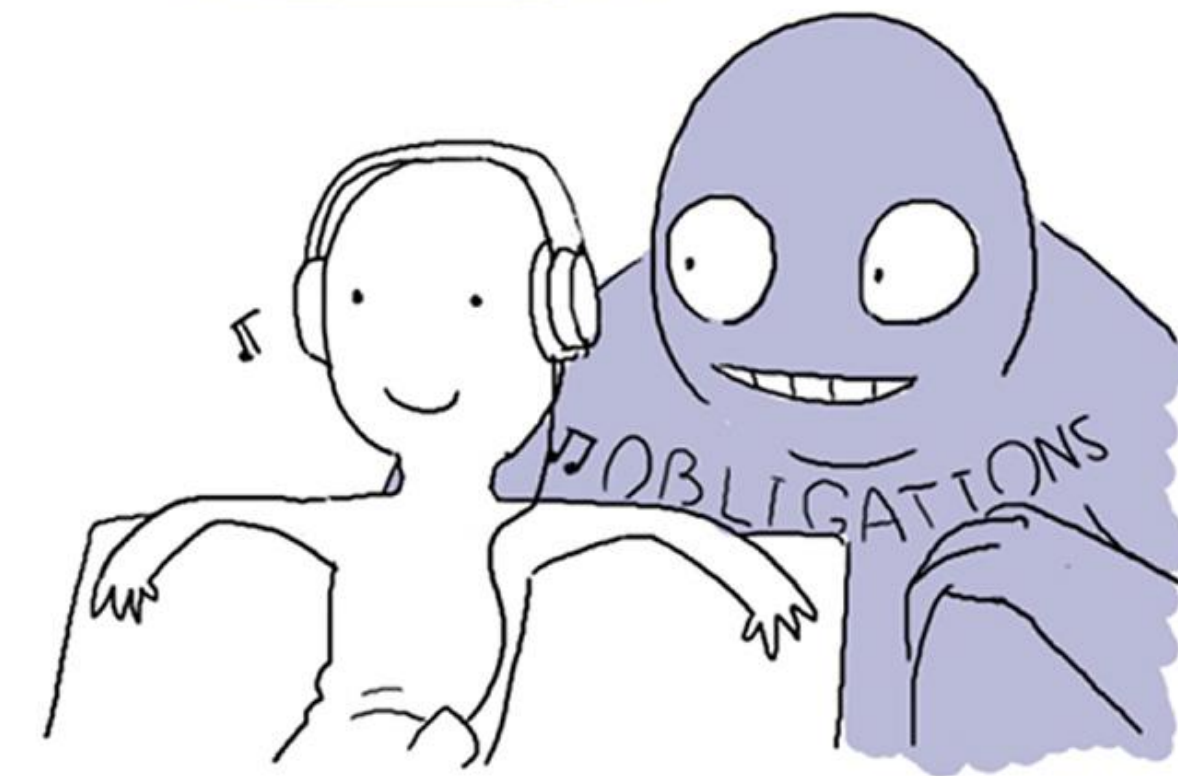
Contact me via [ward@fire.ly](mailto:ward@fire.ly) or on [LinkedIn](#)





# Outline

- What's **Must Support**?
- What are **Obligations**?
- Adding the Obligation extension
- The relationships of Obligations and Must Support
- Conclusions



# What's Must Support

## [Conformance > Conformance Language](#)

- [RFC 2119 - Key words for use in RFCs to Indicate Requirement Levels](#)
  - **MUST** - This word, or the terms "REQUIRED" or "**SHALL**", mean that the definition is an absolute requirement of the specification.
  - **SHOULD** - This word, or the adjective "RECOMMENDED", mean that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.
  - **MAY** - This word, or the adjective "OPTIONAL", mean that an item truly optional.
- [RFC 8174 - Ambiguity of Uppercase vs Lowercase in RFC 2119 Key Words](#)



# What's Must Support

(until R4B)

## [Conformance > § MustSupport](#)

- ... implementations that produce or consume resources SHALL provide "**support**" for the element in some meaningful way.
- When a profile does this, it SHALL also make clear exactly what kind of "support" is required, as this could involve expectations around what a system must store, display, allow data capture of, include in decision logic, pass on to other data consumers, etc.

## [Best Practice IG](#) (Guidance for FHIR IG Creation)

- Writing and narrative
  - The IG must include an explanation of what "**mustSupport**" means for different types of implementations of the IG.



# Must Support in the wild

- The core spec does not use Must Support
  - *base FHIR specification is intended to be independent of any particular implementation context*
  - Intended for profiles
- US Core
  - [US Core Patient Profile](#)
  - [Conformance > Must Support](#)

Differential TableKey Elements TableSnapshot TableStatistics/ReferencesAll

This structure is derived from Patient

Name	Flags	Card.	Type	Description & Constraints
Patient		0..*	Patient	Information about an individual or animal receiving health care services
race		0..1	(Complex)	<b>ADDITIONAL USCDI:</b> US Core Race Extension. (multiple races are supported in the extension) <b>URL:</b> http://hl7.org/fhir/us/core/StructureDefinition/us-core-race
ethnicity		0..1	(Complex)	<b>ADDITIONAL USCDI:</b> US Core ethnicity Extension (multiple ethnicities are supported in the extension) <b>URL:</b> http://hl7.org/fhir/us/core/StructureDefinition/us-core-ethnicity
tribalAffiliation		0..*	(Complex)	<b>ADDITIONAL USCDI:</b> Tribal Affiliation Extension <b>URL:</b> http://hl7.org/fhir/us/core/StructureDefinition/us-core-tribal-affiliation
birthsex		0..1	code	Birth Sex Extension <b>URL:</b> http://hl7.org/fhir/us/core/StructureDefinition/us-core-birthsex <b>Binding:</b> Birth Sex (required): Code for sex assigned at birth
sex		0..1	code	<b>ADDITIONAL USCDI:</b> Sex Extension <b>URL:</b> http://hl7.org/fhir/us/core/StructureDefinition/us-core-sex <b>Binding:</b> Sex (extensible): Concepts used for general documentation of sex representation
genderIdentity		0..*	CodeableConcept	<b>ADDITIONAL USCDI:</b> The individual's gender identity <b>URL:</b> http://hl7.org/fhir/us/core/StructureDefinition/us-core-genderIdentity <b>Binding:</b> Gender Identity (extensible)
identifier	S	1..*	Identifier	An identifier for this patient
system	S	1..1	uri	The namespace for the identifier value
value	S	1..1	string	The value that is unique within the system.
name	S	1..*	HumanName	A name associated with the patient





# What's Must Support?

(R5 and later)

- [Conformance > § Obligations for Applications \(MustSupport\)](#)
- [Conformance > Implementation Obligations](#)

*Profiles can make the expectations clear by either:*

- *Providing a narrative description of the obligations associated with the element as part of an implementation guide in which the profile is published, or in the narrative description of the element*
- *Providing detailed expectations about the element using the **obligation** element*



# The Obligation extension













































- Part of the [FHIR Extensions Pack](#)
  - Available for FHIR STU3 and up
- Goal
  - Clarifying what Must Support means
  - Expectations for different actors, without needing a multitude of profiles
  - Does not affect regular validation, only affects behavioral validation (mostly in test systems)
- Can occur on:
  - An element of a profile
  - The root of a profile (all elements, or subset of them)
  - The type of the element of a profile (only for that type)
- The elements (subset, all optional)
  - Code – What MAY/SHOULD/SHALL be supported
  - Actor – For whom does it apply
  - Usage – In what circumstances
  - Filter – Eg. “Only the first three values”
  - Process – As part of what process





# Obligations in the wild

- Canadian FHIR Registry > CA Core+
- HL7 Europe Laboratory Report

Patient			
 PatientCACore (Patient)			Patient
 extension		0..*	Extension
 identifier	 	0..*	Identifier
 active	 	0..1	boolean
 name	  	0..*	HumanName
 telecom	 	0..*	ContactPoint
 gender	 	0..1	code 
 birthDate	 	0..1	date
 deceased[x]	  	0..1	
 address	 	0..*	AddressCACore
 maritalStatus		0..1	CodeableConcept 
 multipleBirth[x]		0..1	
 photo		0..*	Attachment
 contact		0..*	BackboneElement
 communication		0..*	BackboneElement
 generalPractitioner		0..*	Reference(PractitionerCACore   PractitionerRol...
 managingOrganization		0..1	Reference(OrganizationCACore)
 link	 	0..*	BackboneElement



# The current list of Obligation codes

From [the required ValueSet](#)

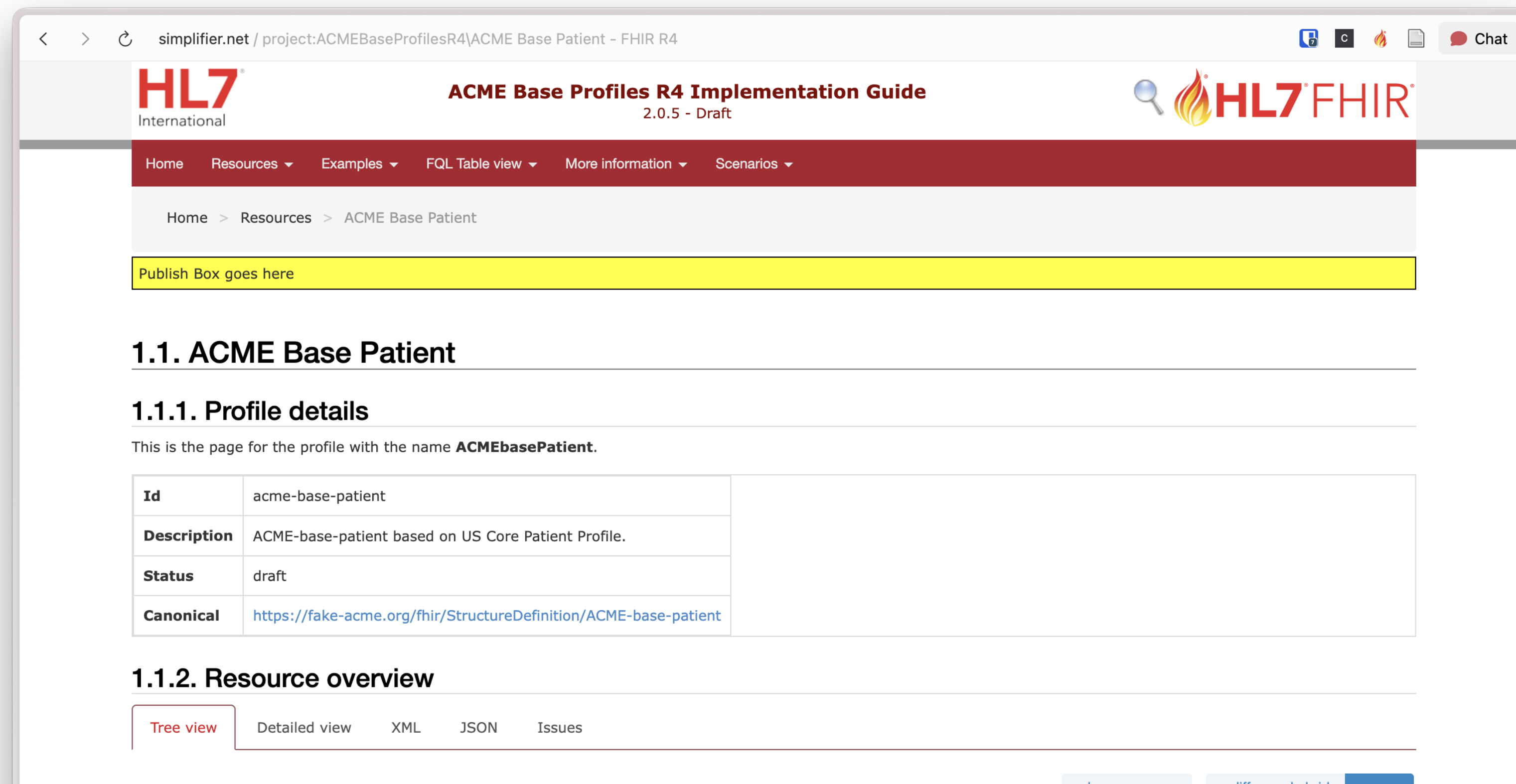
Category	MAY	SHOULD	SHALL
Populate		SHOULD:populate	SHALL:populate
Populate if known		SHOULD:populate-if-known	SHALL:populate-if-known
Able to populate	MAY:able-to-populate	SHOULD:able-to-populate	SHALL:able-to-populate
Narrative: include	MAY:in-narrative	SHOULD:in-narrative	SHALL:in-narrative
Narrative: exclude		SHOULD:exclude-narrative	SHALL:exclude-narrative
User input	MAY:user-input	SHOULD:user-input	SHALL:user-input
Explain (justify irrelevance or populate)		SHOULD:explain	SHALL:explain
Persist (retain/store)	MAY:persist	SHOULD:persist	SHALL:persist
Alterability	MAY:alter	SHOULD:no-alter	SHALL:no-alter
Error tolerance when present		SHOULD:no-error	SHALL:no-error
Invalid handling: reject		SHOULD:reject-invalid	SHALL:reject-invalid
Invalid handling: accept		SHOULD:accept-invalid	SHALL:accept-invalid
Display (render)	MAY:display	SHOULD:display	SHALL:display
Process (workflow/logic)	MAY:process	SHOULD:process	SHALL:process
Print (paper/PDF)	MAY:print	SHOULD:print	SHALL:print
Handle (interpret correctly)		SHOULD:handle	SHALL:handle
Ignore (deliberate no-op)	MAY:ignore	SHOULD:ignore	SHALL:ignore



# Let's add some obligations!

## How about...

- Patient apps should display the ACME Corp Identifier
- EHRs should populate the given and family name if known



# Relations

- Open profiling: Use expectations instead of **Cardinality** ([Best practice IG](#))
  - *Use mustSupport to identify what must be supported, not cardinality*
  - *Try to allow for existing/legacy data unless you're happy to throw it all away.*
    - *0..1, mustSupport allows for missing data while still setting expectations for data sharing*
- **Modifier** → Likely to be Must Support
- Obligation → Must Support
  - [\[FHIR-43615\] Allow obligations to be applied w/o MustSupport flag](#) (Not Persuasive)
- Must Support best practices for your consideration:
  - Probably parent elements also Must Support
  - At least one child element also Must Support
  - Add a comment why this was marked Must Support



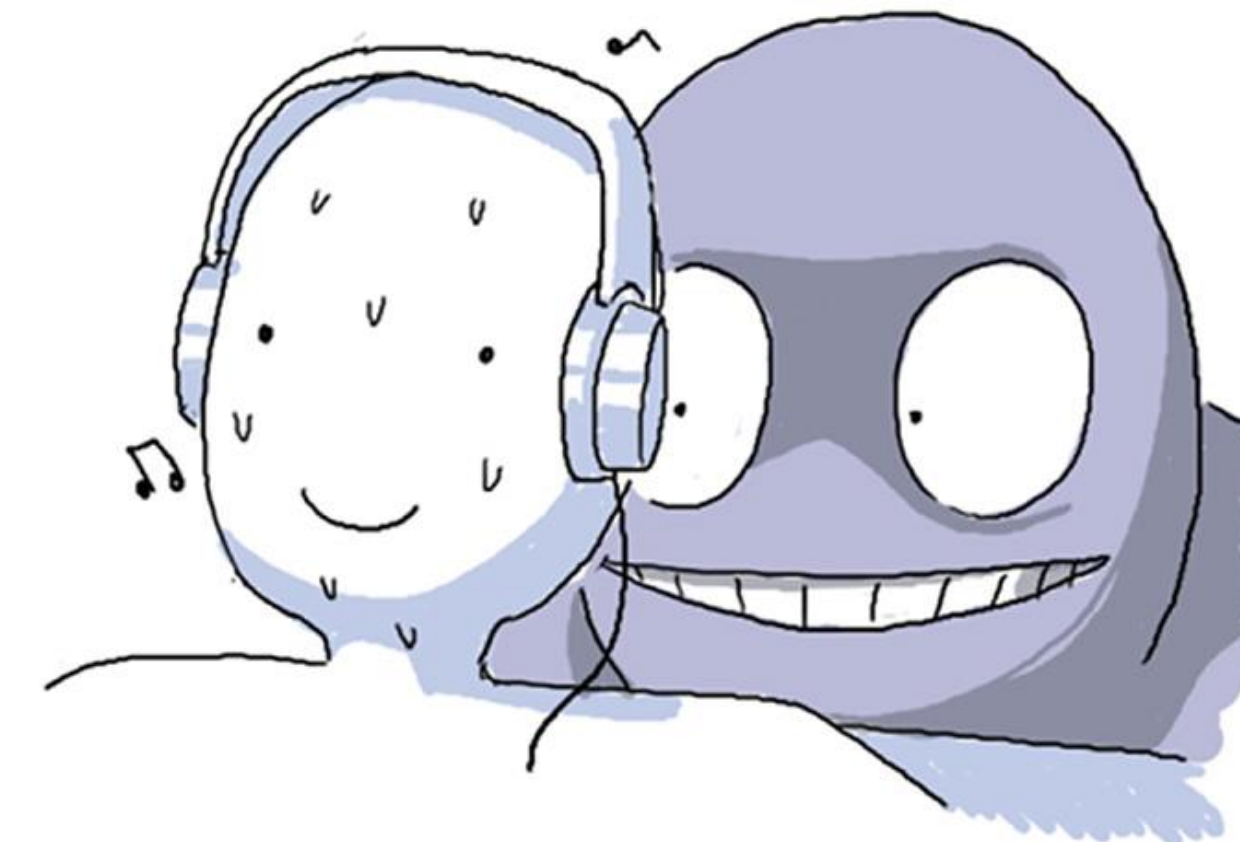
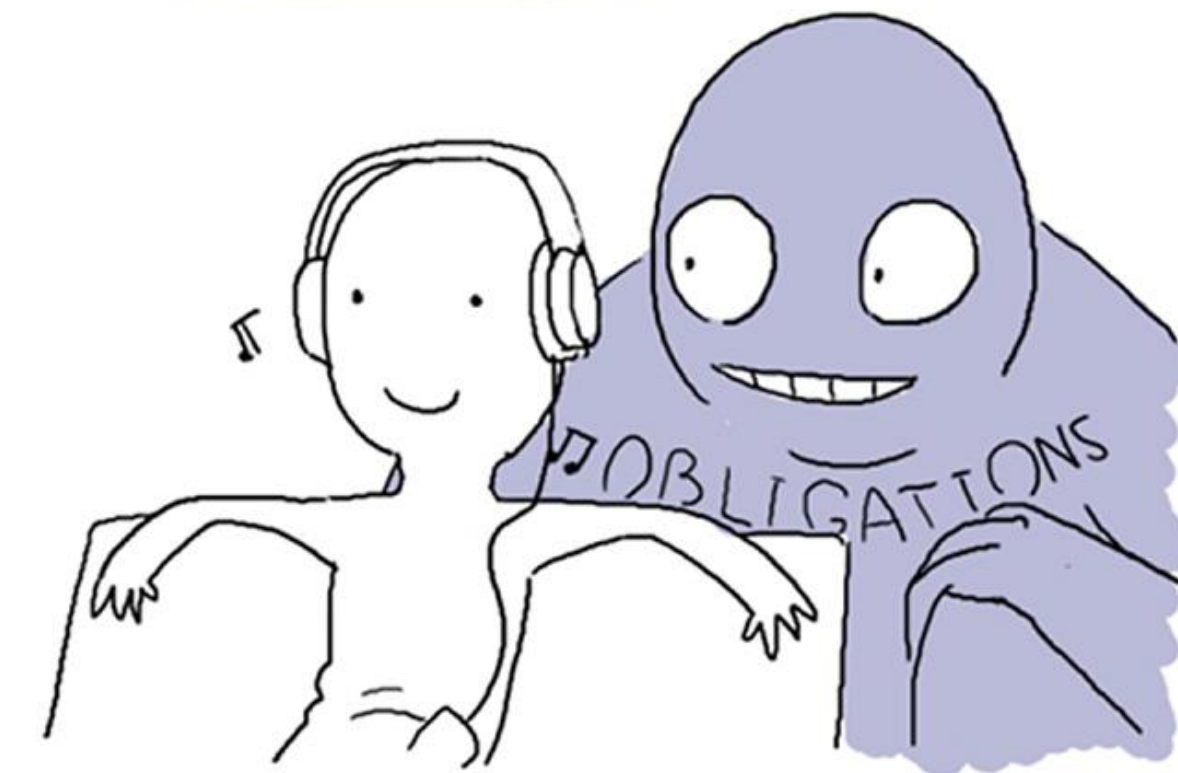


# Conclusions

Obligations provide more details to Must Support, for conveying expectations and behavioral testing.

- Warning, it's new:
  - Standards status: Trial-use
  - Maturity Level: 1
- But it's also rapidly getting adoption.

Contact me via [ward@fire.ly](mailto:ward@fire.ly) or on [LinkedIn](#)



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