

## Language Translation: Next steps

Lloyd McKenzie – Dogwood Health Consulting




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## Who am I?

- Name: **Lloyd McKenzie**
- Role: Chief Standards Officer
- Company:  **DOGWOOD**  
Health Consulting
- Background:
  - One of FHIR's initial editors
  - Cochair of FMG and FHIR Infrastructure
  - Heavily involved in healthcare interoperability for over 20 years
  - Unofficial FHIR community manager



# Outline

- Quick setting of context/problem
- Proposal for general purpose translation mechanism
  - Questions for clarification (discussion after)
- Open discussion (most of our time)

## Context

- Follow-on from Grahame's i18n talk before lunch
- How do we make translation more generalized?
  - What gets translated?
  - What's the context?
  - What's the translation 'key'?
- How does translation happen outside the IG publication space?
- Ideas originated from SDC discussion about

# What gets translated?

- Not everyone needs the same elements translated
  - More elements = more translation cost
- Could include core elements and/or extensions
- Proposal:
  - Create a profile for each type of resource to translate
  - Use the [elementdefinition-translatable](#) extension to flag what to translate

## What's the context?

- The same words may translate differently depending on context
  - Gender
  - Pluralization
  - Meaning
- Professional translators use context to determine the translation

### English

Q1: Condition status:

Active, Inactive, Unknown

Q2: Treatment status:

Active, Inactive, Unknown

### French

Q1: État de la condition:

Active, Inactive, Inconnue

Q2: État du traitement:

Actif, Inactif, Inconnu

# Selecting context

- Considerations
  - Could come from one element or many
  - Will vary based on what element is being translated
  - Needs to allow for some elements being optional
  - Might depend on how the resource is typically used/populated
- Proposal:
  - Extend translatable extension to allow ‘context-expression’
    - FHIRPath expression selecting the element(s) to export as the translation file
      - May need variables to hold ‘ancestor’ information

## What's the 'key'?

- Translation file needs to know what the translations are for
  - Same word/phrase may appear in >1 place – with different translations
    - i.e. different context
  - Unknown -> Inconnue vs. Unknown -> Inconnu
    - Which goes where?



# Translation Key – Option 1

- Simple FHIRPath
  - `Questionnaire.item[2].item[0].answerOption[2].valueCoding.display`
- Pros
  - It can work on any element in any resource
- Cons
  - It's very fragile
    - Add one new repetition and all the translations break

## Translation Key – Option 2

- Element id

```
<display id="1234" value="Unknown"/>
```

- Pros

- Very stable

- Cons

- Requires source to have ids for all translated elements
  - Typically means you must be the author of whatever you want translated
- Bulks up the instance with noise

## Translation Key – Option 3

- Custom path based on intrinsic keys
  - `Questionnaire.item.where(linkId='abc').answerOption.valueCoding.where(code='U').display`
- Pros
  - Less noisy, “they way it makes sense to do it”
- Cons
  - Requires identifying natural keys and writing (and parsing) FHIRPath to specify them
  - Not all elements will have natural keys

# Proposal

- Extend 'translatable' to provide a key path
  - Use whatever FHIRPath approach works best.

## How does translation happen outside an IG?

- Not every use-case for translation involves publishing an IG
  - May just want to publish a code system, profile, or protocol with embedded translations
- Needed operations:
  1. Given a profile and an instance, generate a translation file (PO, XLIFF, etc.)
  2. Given a completed translation file and an instance:
    1. Update the instance with translation extensions reflecting the translations
    2. Given a language, generate a new instance with wording replaced with translations into chosen language

# Proposal

- Define operation definitions for those 3 operations
  - Consume industry standard translation files

## Notes

- What Grahame is doing is a subset of this
  - Specific resources
  - Specific elements (as used by IG publisher)
  - For a single purpose (IG translations)
- Do we need the broader solution?
- Original (and continuing?) discussion here:
  - <https://jira.hl7.org/browse/FHIR-32379>

## Discuss!

- What to translate?
- What's the context?
- What's the key?
- Operations?



## Q&A

- [lloyd@dogwoodhealthconsulting.com](mailto:lloyd@dogwoodhealthconsulting.com)
- Or better yet, include the community and ask/discuss on [chat.fhir.org](https://chat.fhir.org)



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