A pragmatic approach to facilitate co-existence of concept systems using SNOMED CT as reference terminology

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SCOPE OF PROJECT

- Standardization to support consistent and structured recording of health data at municipal level
- Core information in home care should be registered using standard classifications and terminologies

98 municipalities in Denmark
(Local Government Denmark)

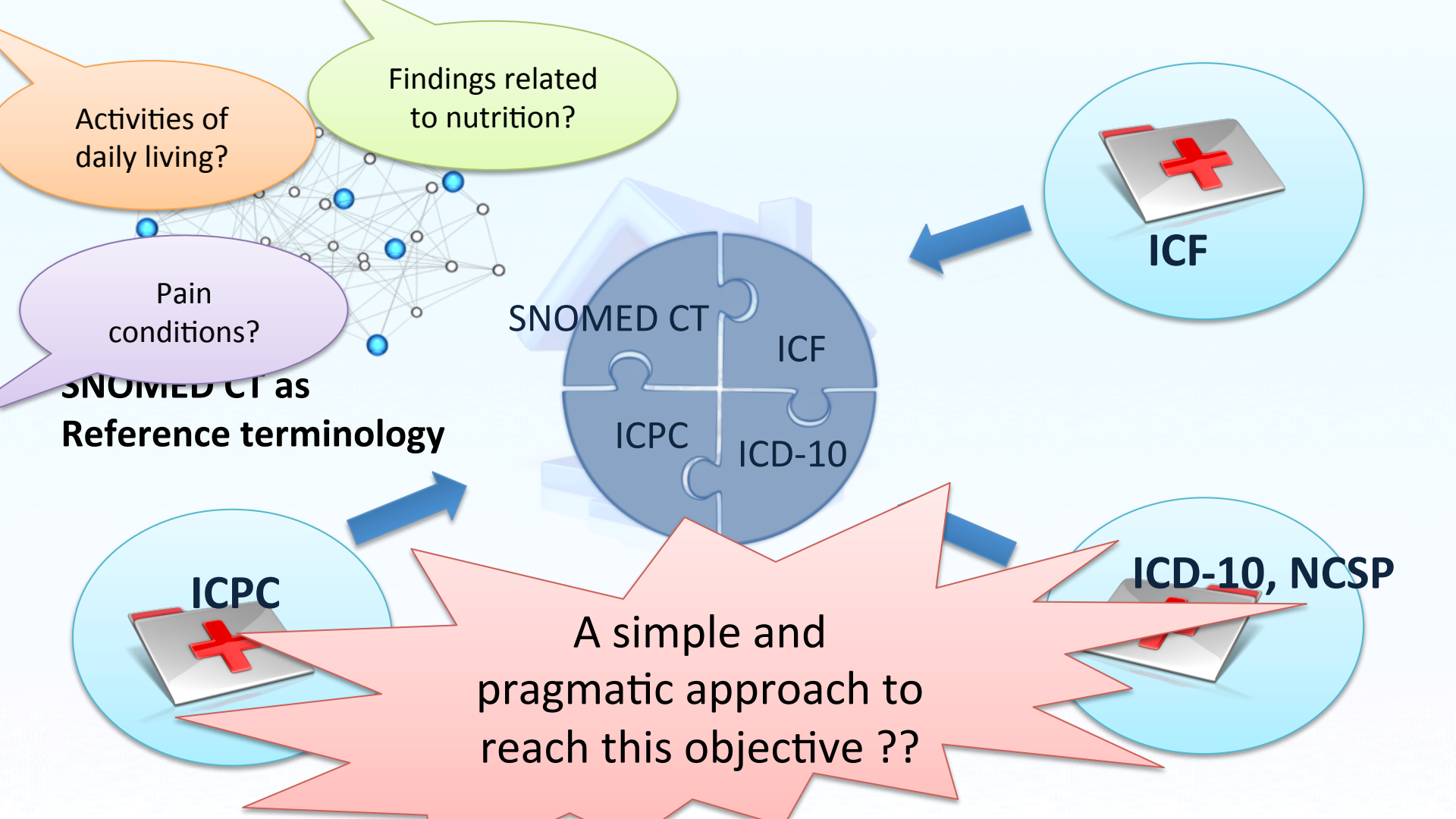
SCOPE OF PROJECT

Municipality

ICF

ICPC

ICD-10, NCSP


Activities of daily living?
Findings related to nutrition?
Pain conditions?
SNOMED CT as Reference terminology
SNOMED CT
ICF
ICPC
ICD-10
ICF
ICPC
ICD-10, NCSP
A simple and pragmatic approach to reach this objective ??

Objective

- What degree of integration between coding systems is necessary?

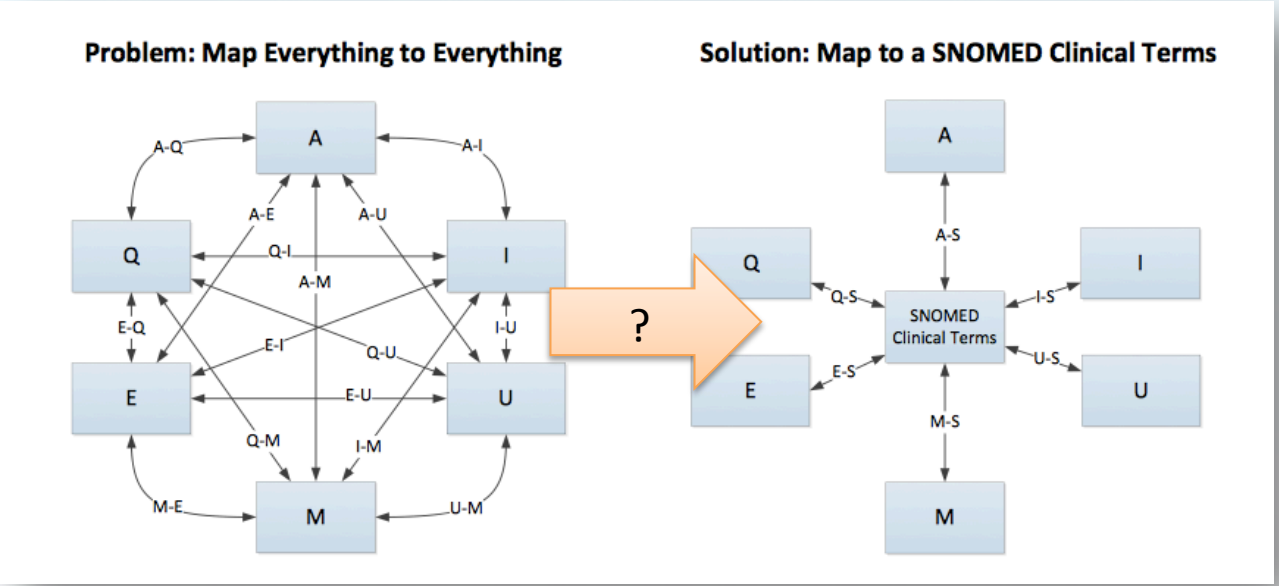
Full vs. partial map

- What technical implementation facilitates co-existence?

Introducing the mapping stem

SNOMED CT as Reference terminology

- *"As a common global reference terminology, SNOMED CT limits the need for development of "everything to everything" maps between multiple different code systems. "* *[IHTSDO, starter guide]*

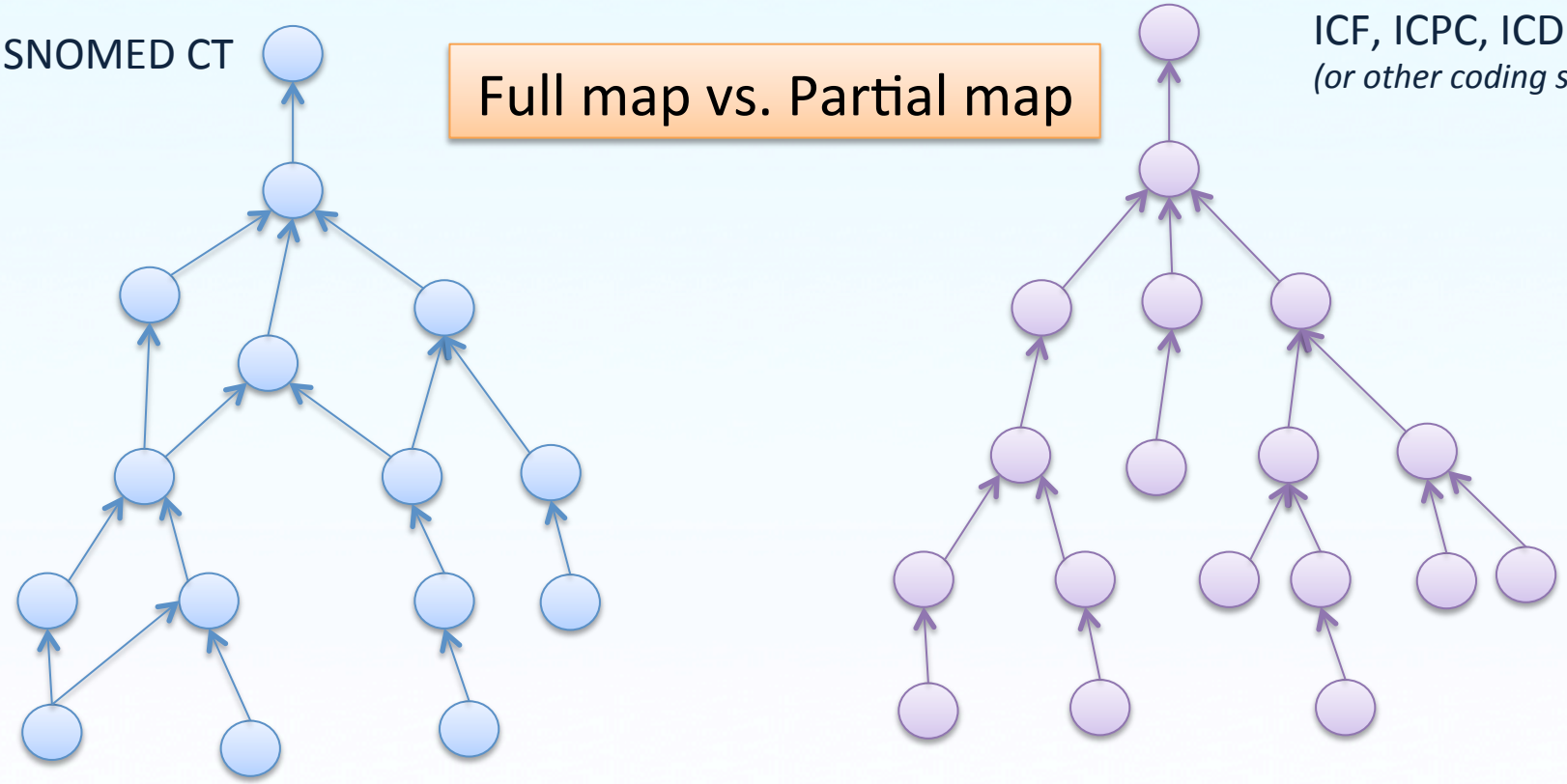


SNOMED CT as REFERENCE TERMINOLOGY

SNOMED CT

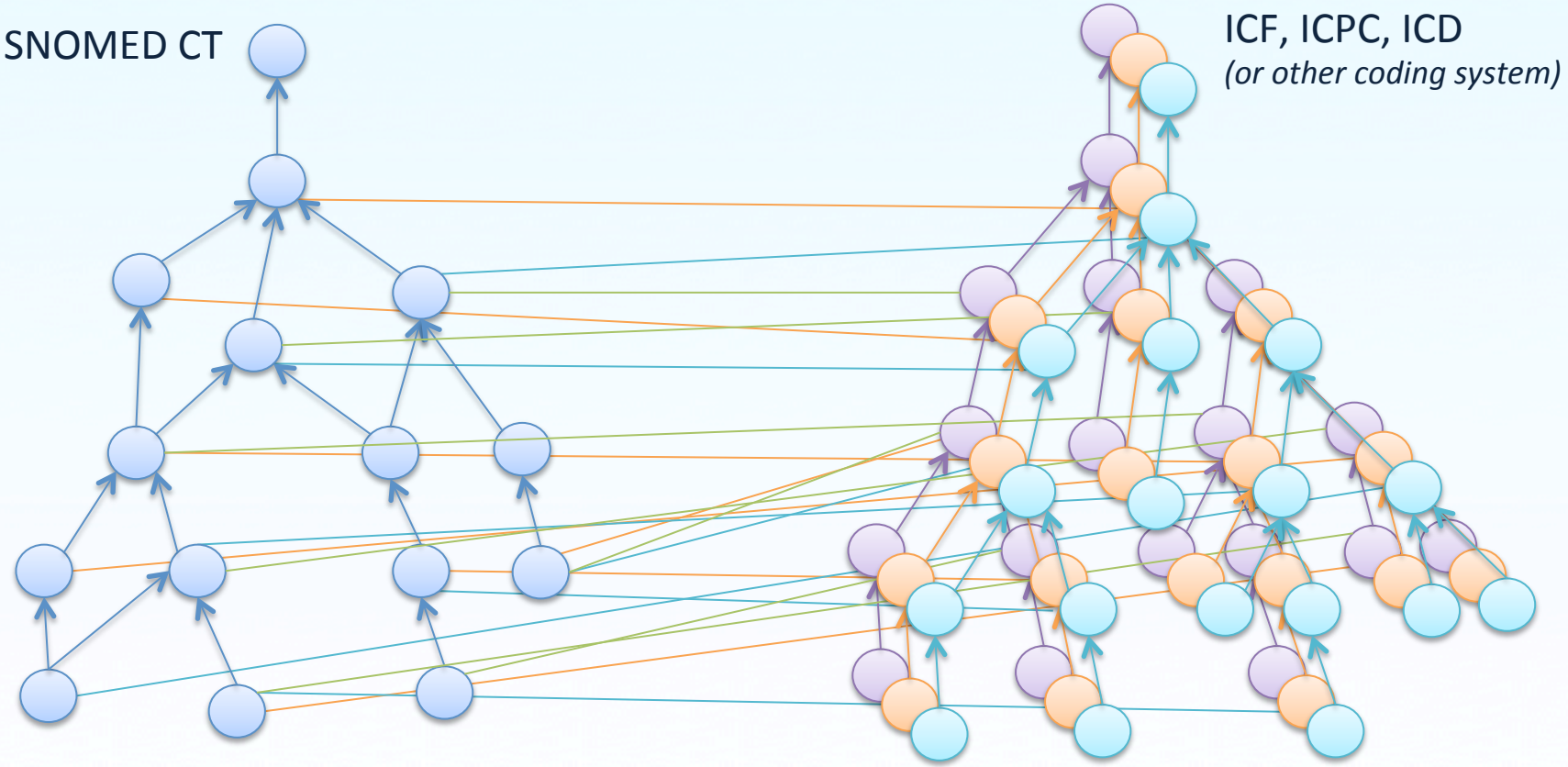
Full map vs. Partial map

ICF, ICPC, ICD
(or other coding system)



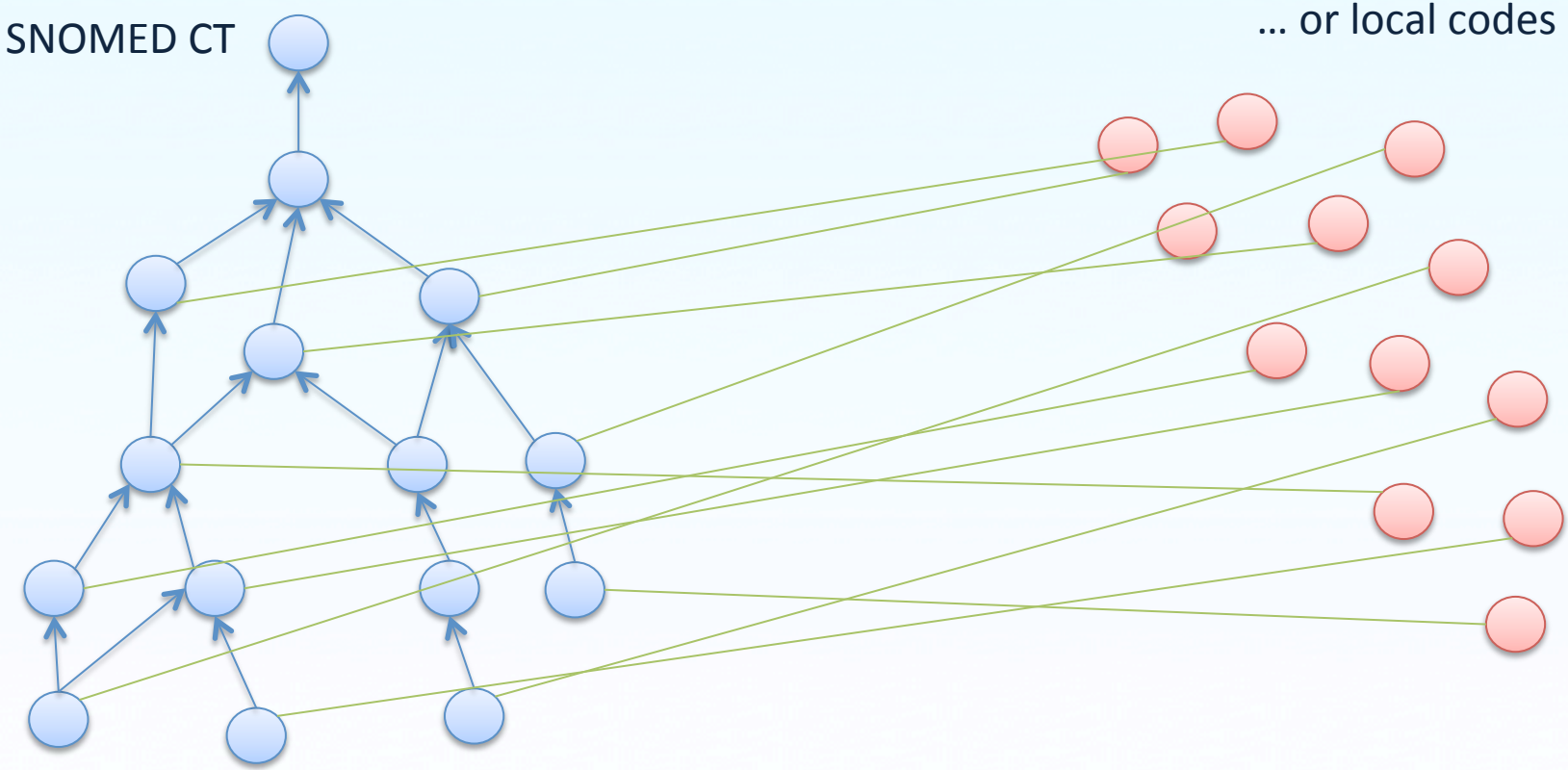
FULL MAP

SNOMED CT as REFERENCE TERMINOLOGY



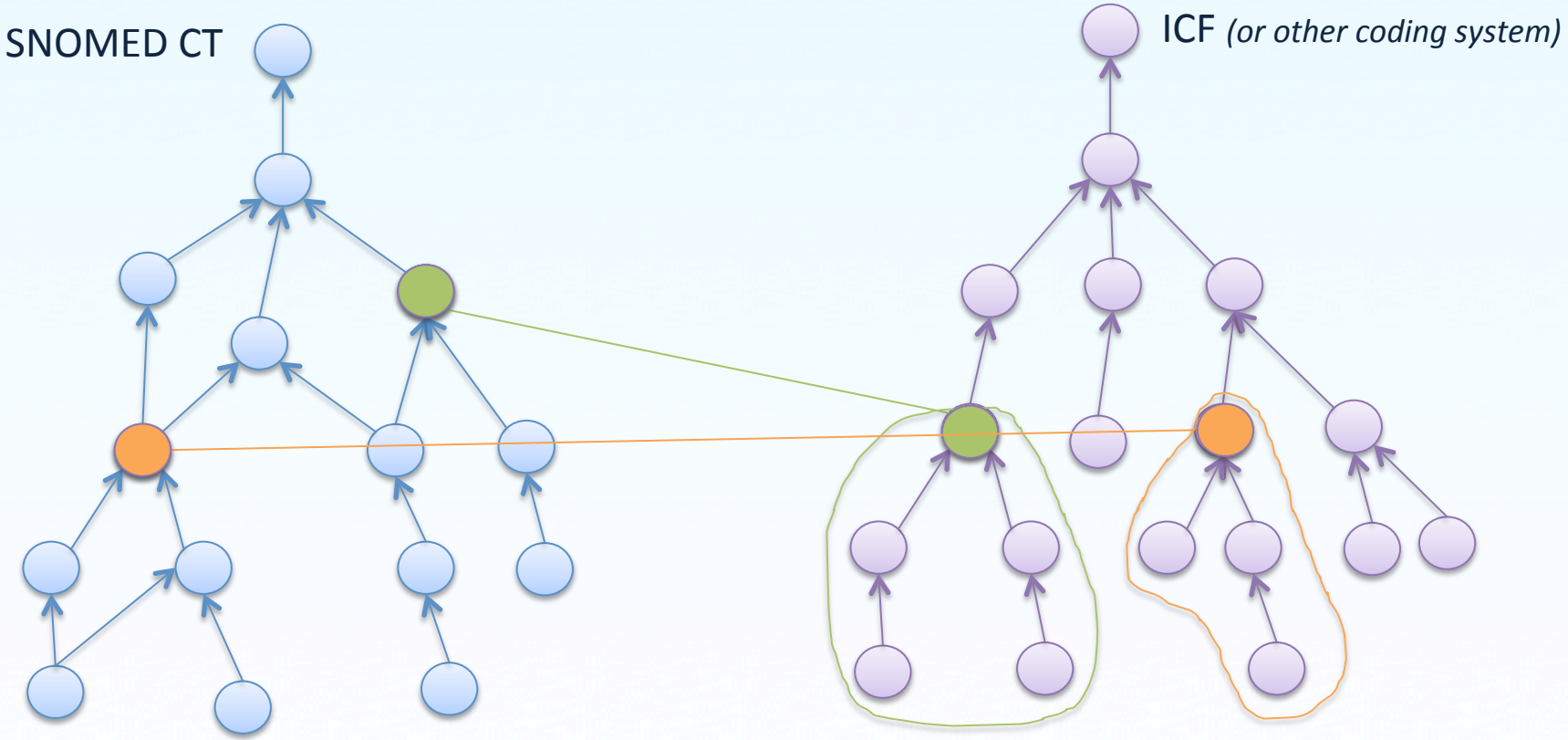
FULL MAP

SNOMED CT as REFERENCE TERMINOLOGY



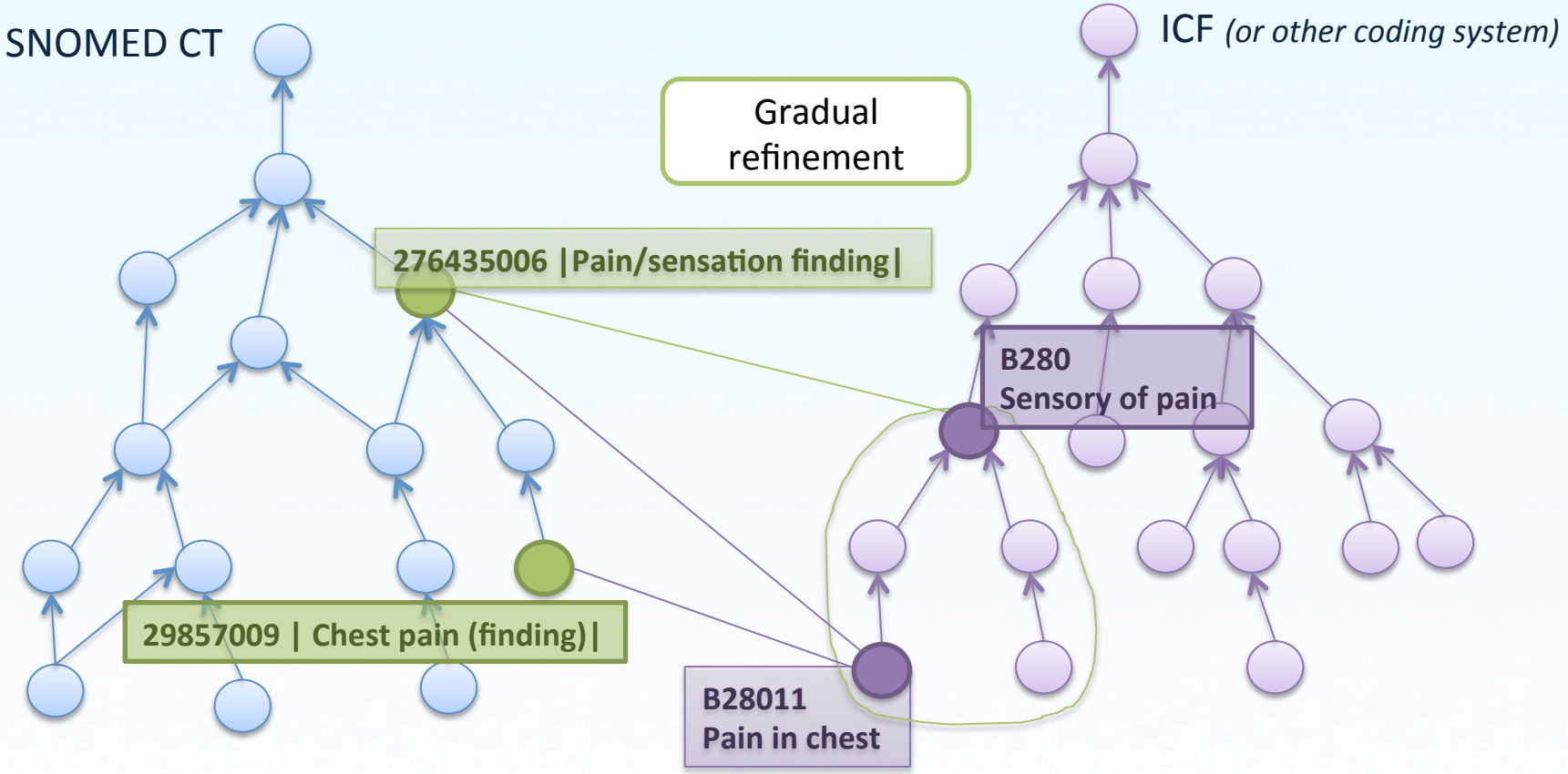
PARTIAL MAP

SNOMED CT as REFERENCE TERMINOLOGY

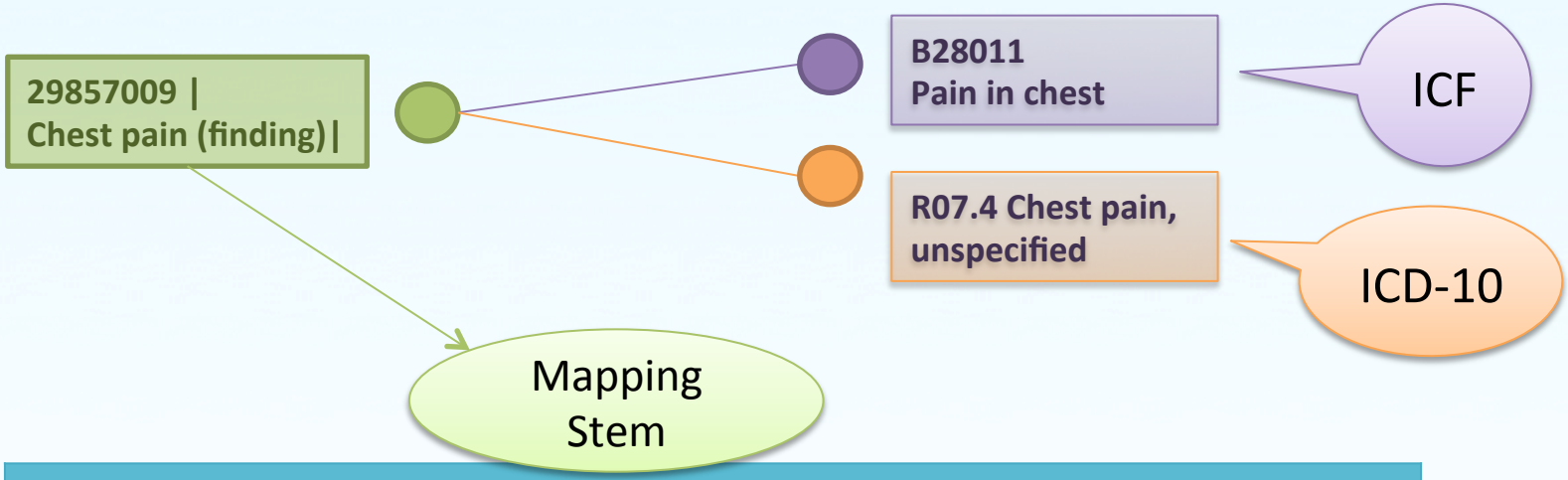


PARTIAL MAP

SNOMED CT as REFERENCE TERMINOLOGY



The use of mapping stem in Reference Sets



id	refsetId	referencedComponentId	mapTarget
some_id	aRefSetId	29857009 | Chest pain|	B28011 Pain in chest
another_id	aRefSetId	29857009 | Chest pain|	R07.4 Chest pain, unspecified

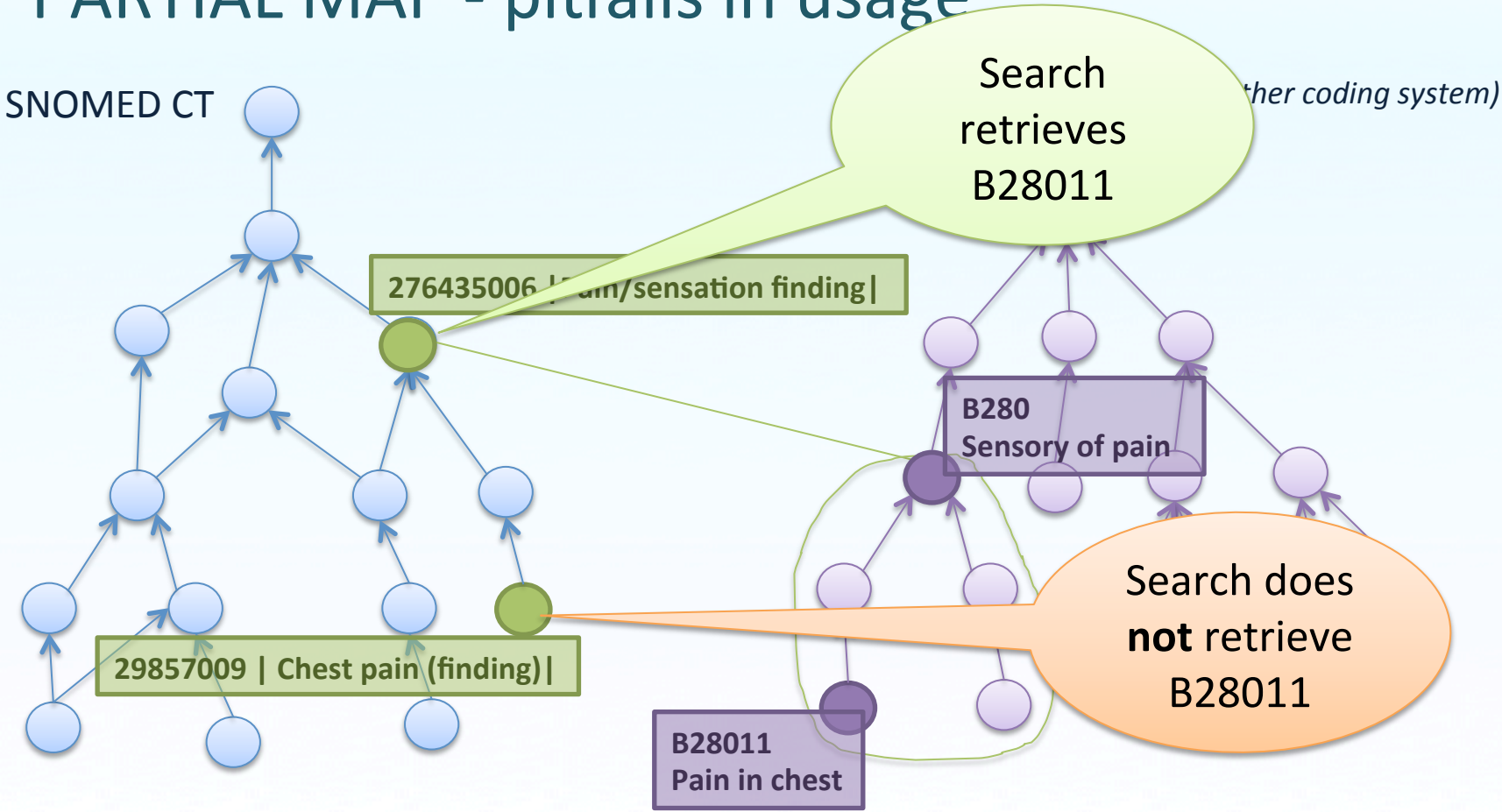
Mapping stem

- The mapping stem is not intended for
  - A translation between concepts from different concept systems
  - Full semantic map between concepts

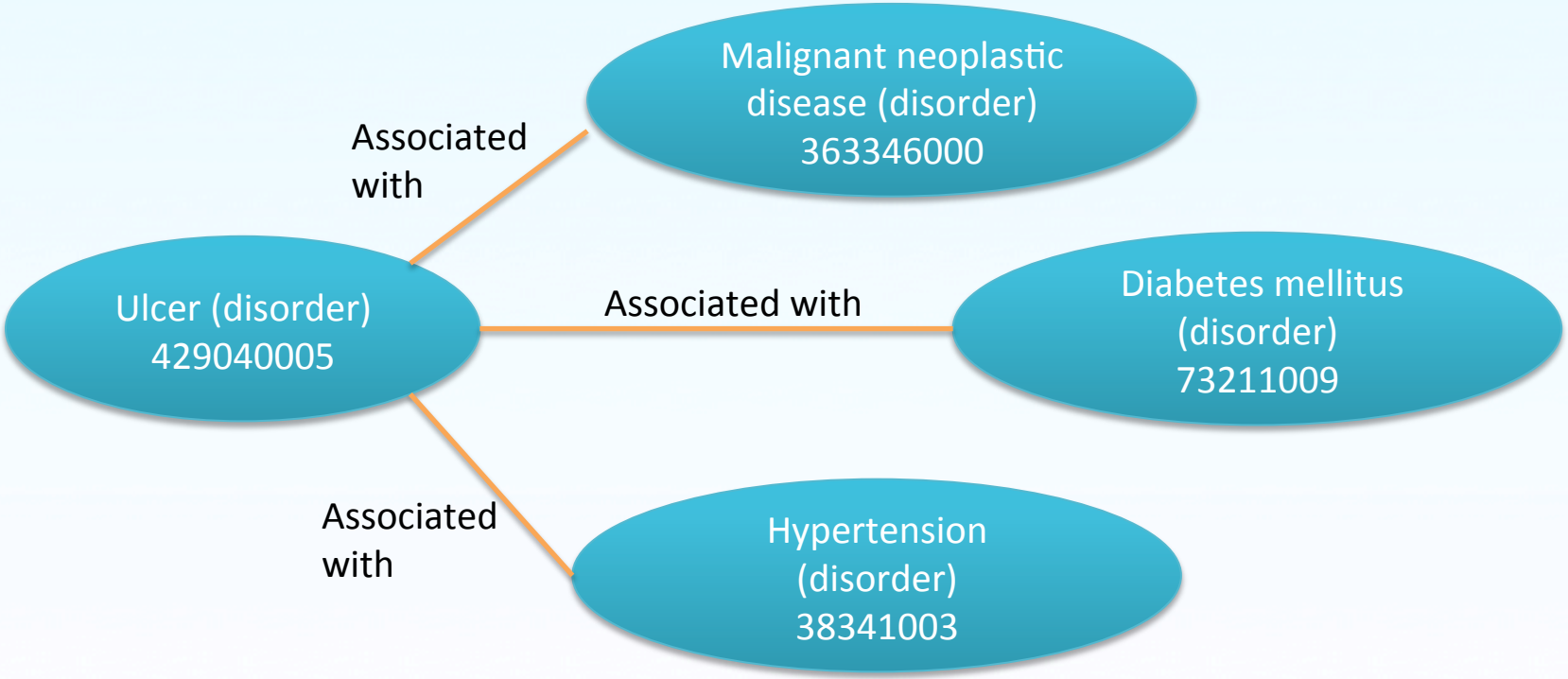
Mapping stem

- Assumptions to partial map-usage
  - Awareness about retrieval needs and requirements
  - High-level groups of interest
  - Never a post-coordinated expression

PARTIAL MAP - pitfalls in usage



Mapping stem and post-coordination



Mapping stem and post-coordination

And as expressions…

Consistent representation of expressions that represent the same type of information

i.e. same level of granularity of mapping stem

429040005 | Ulcer|: 47429007 | Associated with| = 363346000 | Malignant neoplastic disease|

429040005 | Ulcer|: 47429007 | Associated with| = 73211009| Diabetes mellitus |

429040005 | Ulcer|: 47429007 | Associated with| = 38341003 | Hypertension|

The use of mapping stem in Reference Sets

- Enable post-coordinated expressions to be represented in Reference Sets

Mapping Stem

Expression

id	refsetId	referencedComponentId	expression
some_id	aRefSetId	429040005 | Ulcer|	429040005 | Ulcer|: 47429007 | Associated with| = 363346000 | Malignant neoplastic disease|
another_id	aRefSetId	429040005 | Ulcer|	429040005 | Ulcer|: 47429007 | Associated with| = 73211009| Diabetes mellitus |
aThird_id	aRefSetId	429040005 | Ulcer|	429040005 | Ulcer|: 47429007 | Associated with| = 38341003 | Hypertension|

The use of mapping stem in Reference Sets

Mapping Stem

Expression

id	refsetId	referencedComponentId	expression
some_id	aRefSetId	**429040005 | Ulcer|**	429040005 | Ulcer|: 47429007 | Associated with| = 363346000 | Malignant neoplastic disease|
another_id	aRefSetId	**429040005 | Ulcer|**	429040005 | Ulcer|: 47429007 | Associated with| = 73211009| Diabetes mellitus |
aThird_id	aRefSetId	**429040005 | Ulcer|**	429040005 | Ulcer|: 47429007 | Associated with| = 38341003 | Hypertension|

Retrieve all types of Ulcer
(overall concept groups)

The use of mapping stem in Reference Sets

Mapping Stem

Expression

id	refsetId	referencedComponentId	expression
some_id	aRefSetId	429040005 | Ulcer|	429040005 | Ulcer|: 47429007 | Associated with| = **363346000 | Malignant neoplastic disease|**
another_id	aRefSetId	429040005 | Ulcer|	429040005 | Ulcer|: 47429007 | Associated with| = **73211009| Diabetes mellitus |**
aThird_id	aRefSetId	429040005 | Ulcer|	429040005 | Ulcer|: 47429007 | Associated with| = **38341003 | Hypertension|**

Use expressions to explore the different types of Ulcer

Conclusion

Full map

- Best foundation for utilizing SNOMED CT
  - Retrieval and analytics
- Resource-heavy
  - Mapping
  - Time
  - Maintenance

Partial map

- Simple retrieval and analytics
- Resource saving
- Pragmatic starting point
  - Incremental development towards full map is possible

Thank you for your attention…..