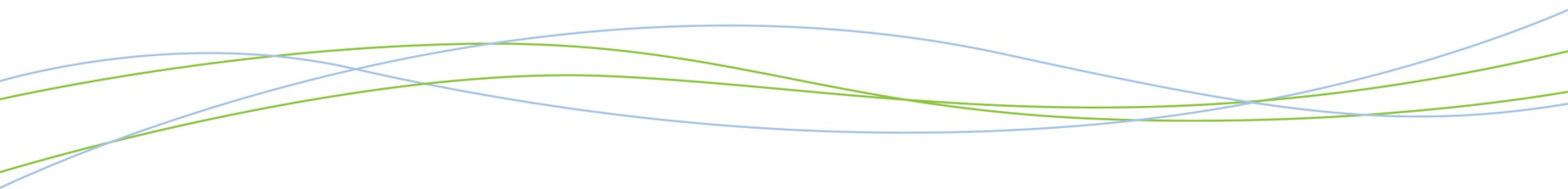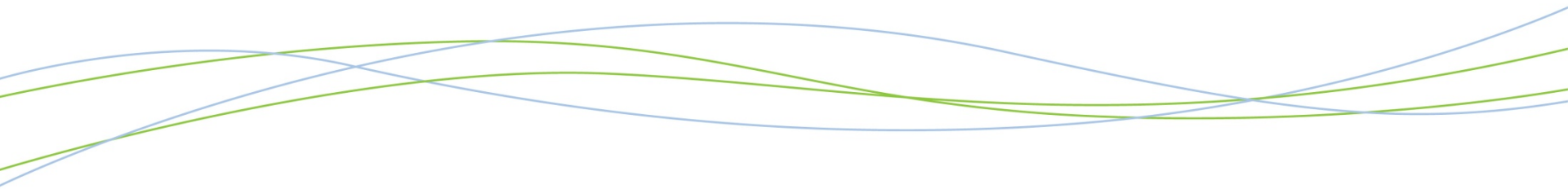# HSPC Interoperability from a Profile Perspective

DEFINITIONS
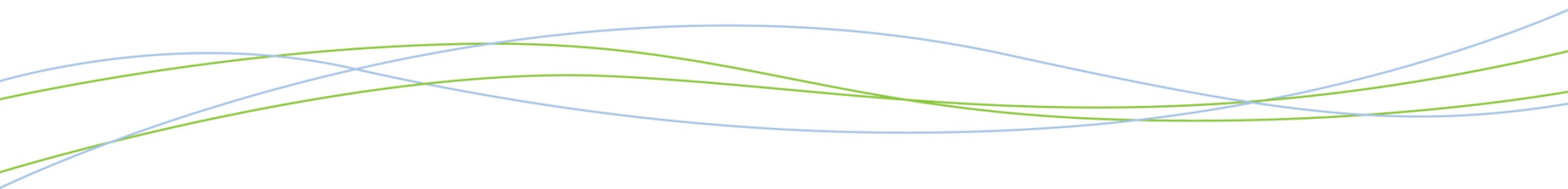
Definitions

"High-level" Interoperability:

- Interoperability at the level at which FHIR defines resources (Patient, Observation, Procedure, Practitioner, Condition, etc.)
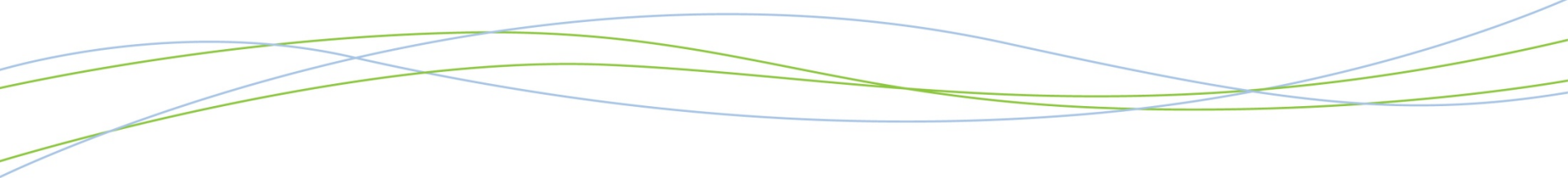
"Low-level" ("True") Interoperability:

- Interoperability at a more granular level, e.g., profiles for Hematocrit, Glucose, Heart Rate, Body Weight, Diabetes, Pain, Ulcerative Colitis, Nausea, Rash, etc.

Definitions (continued)

"Narrowing" a profile:

- Constrains value sets, constrains data type choices, specifies bindings (where none were originally specified), constrains cardinality, sets codes, declares "must support"

- May be done:

  - Physically, via creating a profile that uses the original profile as the base

  - Logically, via creating a profile that's a sibling to the original profile and that is only different from the original in "narrowing" ways
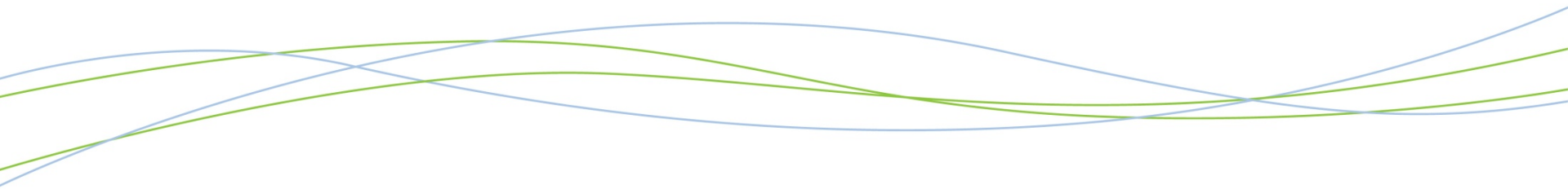
Definitions (continued)

"Broadening" a profile:

- Adds extensions, expands value sets

- May be done:
    - Physically, via creating a profile that uses the original profile as the base
    - Logically, via creating a profile that's a sibling to the original profile and that is only different from the original in "broadening" ways
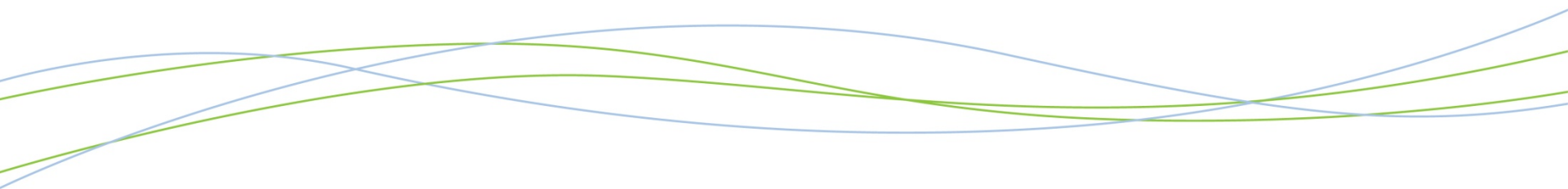
HIGH-LEVEL INTEROPERABILITY

Note of explanation

We strongly advocate that ONC-sponsored groups like

- the Data Access Framework (DAF) group
- the Clinical Quality Framework (CQF) group

work together to co-develop a single set of profiles (or at least a single set + constraints).

Where possible, HSPC will use/endorse this set.

Where necessary, HSPC will create derivatives of these.

The following slides discuss the relationship of HSPC "high-level" profiles to these common ONC profiles.
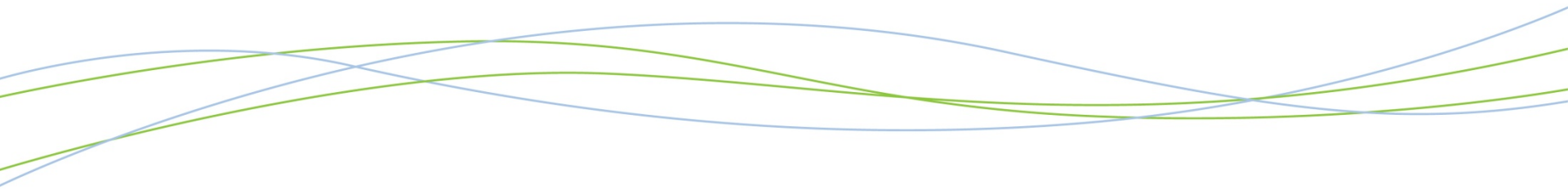
The common ONC profiles are referred to as "DAF profiles."

High-Level Interoperability: Narrowing

If HSPC profiles only "narrow" DAF profiles:

- "HSPC-conformant data" will be conformant with DAF profiles
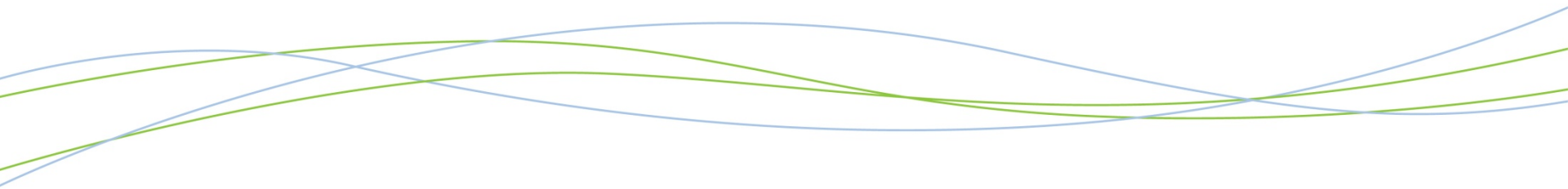- Not all DAF-conformant data will be HSPC-conformant.

NOTE: Whether two systems can be declared "interoperable" depends on the use case and objectives of the systems!

High-Level Interoperability: Broadening

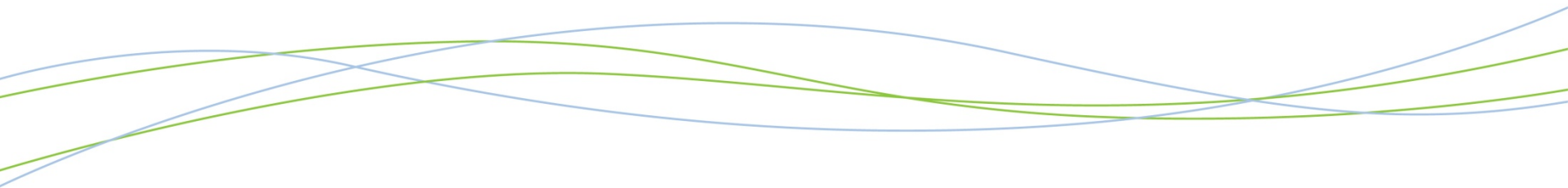If HSPC profiles only "broaden" DAF profiles:

- DAF-conformant data will be conformant with HSPC profiles
- Not all HSPC-conformant data will be DAF-conformant.

High-Level Interoperability: Broadening and Narrowing

HSPC profiles will likely need to both narrow and broaden DAF profiles.
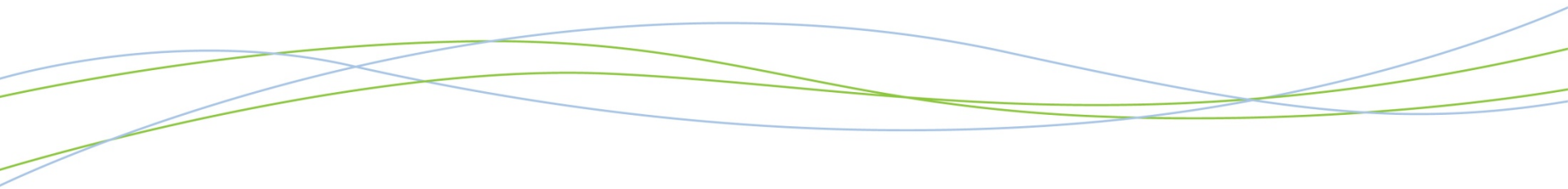
- Narrow:
    - specify bindings
    - constrain value sets and cardinalities
- Broaden:
    - add extensions

High-Level Interoperability: Broadening and Narrowing (continued)

If HSPC profiles both "narrow" and "broaden" DAF profiles:

- Not all DAF-conformant data will be HSPC-conformant.
- Not all HSPC-conformant data will be DAF-conformant.

HIGH-LEVEL INTEROPERABILITY PROPOSAL

High-Level Interoperability: Proposal

HSPC will use the DAF profiles if at all possible.

If necessary, HSPC profiles both "narrow" and "broaden" DAF profiles as needed.

- Not all DAF-conformant data will be HSPC-conformant.
- Not all HSPC-conformant data will be DAF-conformant.

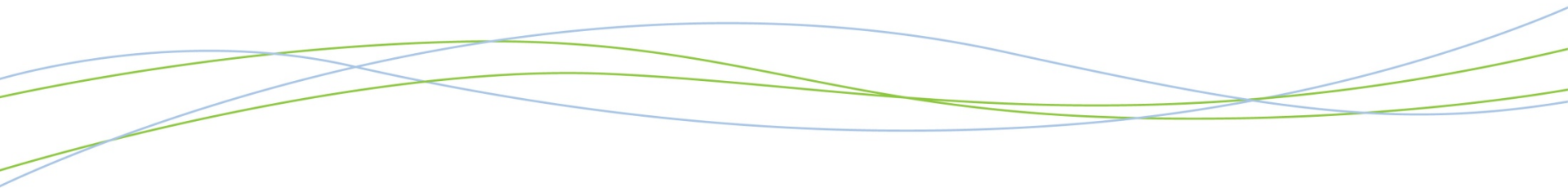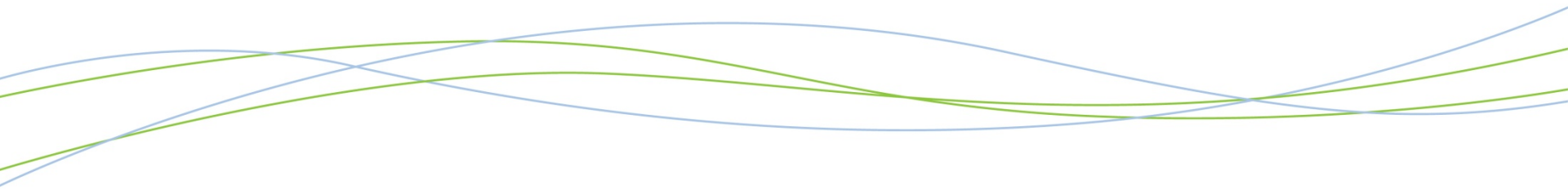# High-Level Interoperability: Proposal (continued)

HSPC will support two "classes" of high-level interoperability:

- Class I: HSPC participants use DAF profiles

- Class II: HSPC participants use HSPC profiles

High-Level Interoperability: Proposal (continued)

Some but possibly not all data will be interoperable between the two classes. Most commonly:

- DAF profile instances won't be conformant with Class II profiles where Class II HSPC profiles have made value set/code constraints.

- HSPC Class II profile instances won't be conformant with Class I (DAF) profiles where Class II HSPC profiles have added extensions.
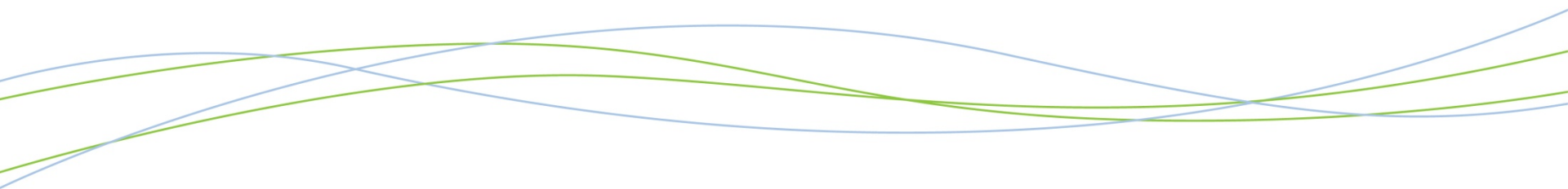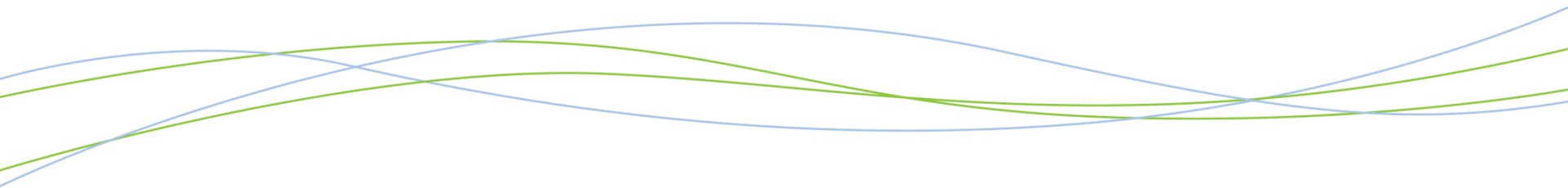
LOW-LEVEL INTEROPERABILITY
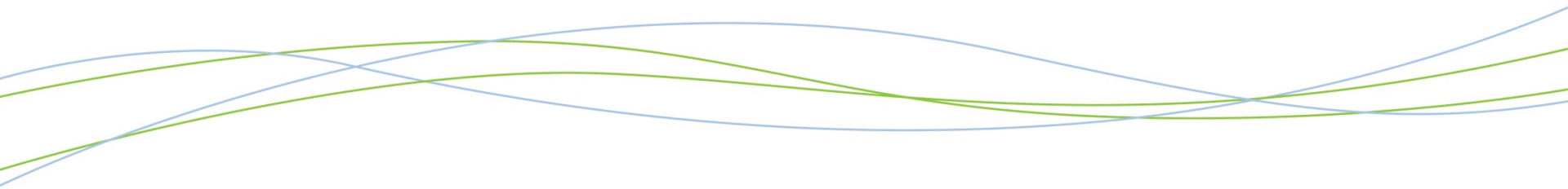
Low-Level Interoperability

Low-Level Interoperability is delivered by specific HSPC profiles

- Specific Lab profiles

- Other observation profiles (heart rate, respiratory rate, pain, height, head circumference, etc.)

- Condition profiles (cancer, diabetes, Crohn's disease, etc.)

- Procedure profiles (hysterectomy, colonoscopy, gastric bypass, etc.)

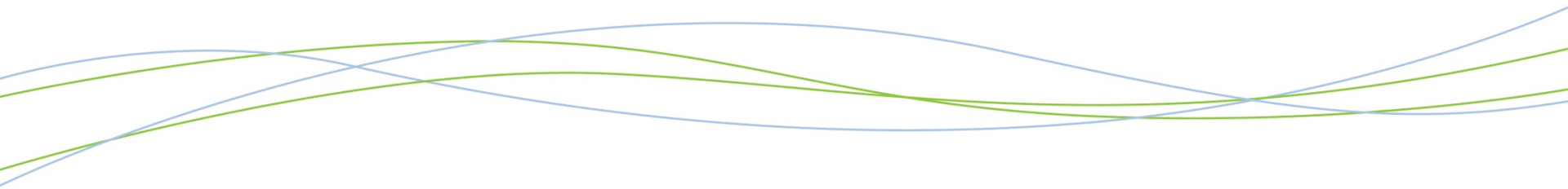# LOW-LEVEL INTEROPERABILITY: PROPOSAL

Low-Level Interoperability: Proposal

Low-Level Interoperability (i.e., specific, granular profiles) will be provided as a third class of interoperability: Class III.

Class III low-level specific profiles are in essence constraints on high level profiles so instances will not be conformant with Class I or Class II.
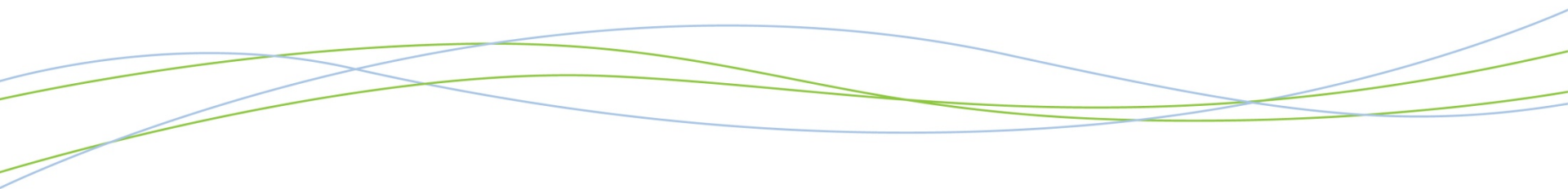
INTEROPERABILITY: PROPOSAL SUMMARY

Interoperability Proposal Summary

CLASS III
INTEROPERABILITY

> **HSPC low-level (specific) profiles**
> **HSPC Class II high-level profiles**

CLASS II
INTEROPERABILITY

> **HSPC Class II high-level profiles**

CLASS I
INTEROPERABILITY

> **DAF profiles**

Interoperability Proposal Summary

CLASS III
INTEROPERABILITY

HSPC low-level (specific) profiles
HSPC Class II high-level profiles

POSSIBLY NOT INTEROPERABLE

CLASS II
INTEROPERABILITY

HSPC Class II high-level profiles

POSSIBLY NOT INTEROPERABLE

CLASS I
INTEROPERABILITY

DAF profiles