The legacy of Bert Kabbes on HL7:
Pioneer, founder, visionary

An HL7 Europe webinar
Tuesday, 16 March 2026, 14.00-15.00 CET

Online on Teams

The legacy of Bert Kabbes at HL7: pioneer, founder, visionary
An HL7 Europe webinar, 16 March 2026, 14-15 CET

Bert's journey …

and what he can teach us

A celebration of his life

HL7
Europe

Housekeeping

- To help ensure a successful webinar please:
  - Use the chat (for comments, questions…)
  - Use reactions/emojis during the presentations
  - Raise your hand if you'd like to speak
  - If you are invited to speak, please turn on your video and say who you are

- The webinar will be recorded.
- Link to recording and slides (in pdf) on www.hl7.tv will be emailed to all registered participants.

The legacy of Bert Kabbes at HL7: pioneer, founder, visionary
An HL7 Europe webinar, 16 March 2026, 14-15 CET

- **Bert Kabbes' journey**
    - Bert and HL7 over the years
      René Spronk, Ringholm
    - Local implementation of global standards
      Robert Stegwee, CEN/TC251
    - Bringing in the policymakers
      Jan-Eric Slot, HL7 Netherlands

- **… and what he can teach us (panel)**
    - *Alexander Henket, Nictiz*
    - *Catherine E Chronaki, HL7 Europe*
    - *Kai Heitmann, HL7 Germany*
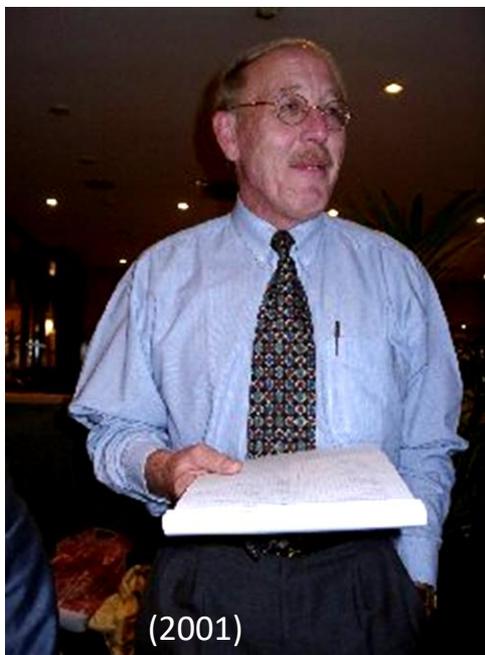
- **Observations / reflections / questions from the audience**

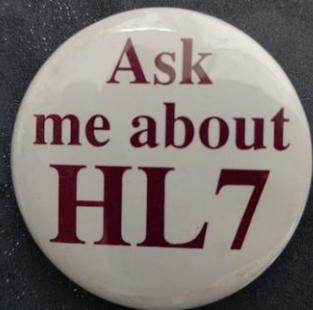- **Closing and next steps**

Moderator: Michael Strübin, HL7 Europe

HL7
Europe

Bert Kabbes – A HL7 history

(1991-2025)

(2001)

(2019)

Study Tours (1991-2002)

Study Tours (1991-2002)

Context: HL7 version 2 – 1986+, peak maturity and new take up around 2005

HL7 – Wordperfect and Paper Handouts

```
MSH                        Message Header
EVN                        Event Type
PID                        Patient Identification
  [PD1]          Additional Demographics
  [{NK1}]        Next of Kin /Associated Parties
PV1                        Patient Visit
[PV2]            Patient Visit - Add'l Info.
[{DB1}]          Disability Information
[{OBX}]          Observation/Result
  . . . . . . .
[{GT1}]          Guarantor
[{IN1           Insurance
   [IN2]         Insurance Additional Info.
   [IN3]         Insurance Additional Info - Cer
   }]
[ACC]            Accident Information
```
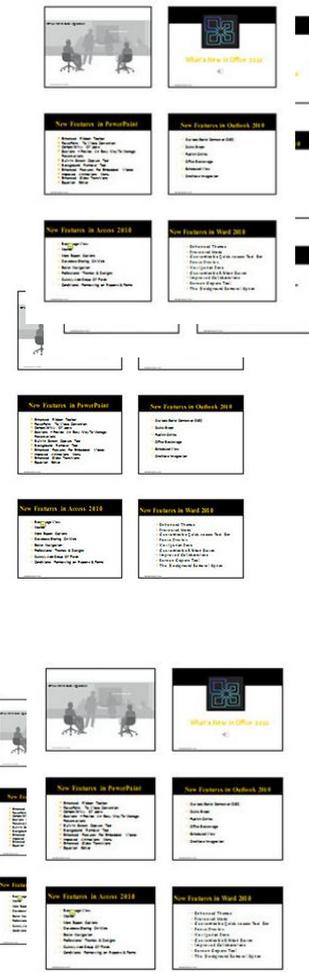
A valid Message Instance

Medinfo 1992, Geneva
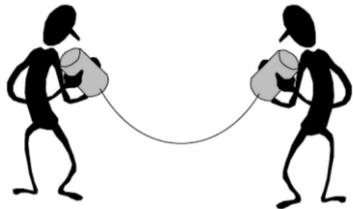
Context: Early European affiliates late 90s / HL7 v2 focused

HL7 Affiliate Agreement

- Dutch 'HL-7 Initiative Committee the Netherlands' (an informal body) was founded September 27, 1991.
- Details of the HL7 Affiliate agreement worked out between Bert, Ed Hammond and HL7 HQ.
  - Use of materials, voting rights, payment of fees to HL7.
- Once the agreement was finalized: HL7 Germany was the first to sign it (in 1993), making it the first 'official' affiliate.
  - HL7 Netherlands was created as a non-profit organization and signed the agreement (in 1993) as the second affiliate.

NEN – Dutch HL7v2 Implementation Guide

- HL7 wasn't an 'official' standard in the 90s
  - Not yet an ANSI (&ISO) standards organization
  - EU had the rule 'if there's a CEN (European) standard, use that instead of anything else', and actively tried to keep the 'American' HL7 standard out of Europe
- Bert arranged for the 'Dutch HL7 v2 Implementation Guide' to become a NEN (Dutch) Standard
  - This allowed HL7 to be listed as a formal requirement in RFPs

HL7 WGM
(ca. 1998)

Noordwijkerhout WGM, 2005

Annual HL7 NL Conference

- Annual HL7 NL Conference since 1992

- 80-180 attendees

- Bert as Sinterklaas (Dutch Santa) in 2011, poking fun at members of the HL7 NL board and the state of interoperability.

(2011)

HL7 Project office & Outsource Training

- The affiliate role changed over the years:
  1. Pioneer phase: create Dutch HL7v2 implementation guide, provide education, organize events
  2. Growth phase: Hl7 NL is a partner of national initiatives: Nictiz (2005+) starts developing HL7v3 implementation guides
     - HL7 Project Office as an intermediary between contractors and specifiers like Nictiz
     - Outsourcing of the provision of training to a third party
     - Initial ideas around 'validating HL7v3 templates' created by commercial/government specifiers.
  3. Mature market phase: Nictiz et.al. with teams of experts create the specifications.

Local implementation of HL7

Local implementation of v2

• Local requirements led to Z-Segments, such as the ZPI in v2.2

SEQ	LEN	DT	R/O	RP/#	TBL#	ITEM#	ELEMENT NAME
* 1	4	SI	R				Set ID - Patient identification aanvullend
* 2	1	ID					Indicatie overleden
* 3	25	ST					Geboorteplaats
* 4	48	PN					Naam echtgenoot
* 5	16	CK					Verwijzend patiëntnummer
* 6	60	CN					Huisarts
* 7	10	ST					Voorletters ouder
* 8	7	NM					Girorekening
* 9	9	NM					Bankrekening
* 10	3	ID					Bloedgroep
* 11	26	TS					Datum en tijd overlijden
* 12	60	CN					Tandarts

Spouse's name

Primary Care Physician

Blood type

Dentist

Local implementation of v2

- Our ambition: to do away with Z-segments in v2.3
  - "The ZPI segment is no longer required in version 2.3. For your convenience, it is indicated here whether, and if so, where you can include the data."
  - "The ZPI segment is no longer required in version 2.3. For your convenience, it is indicated here whether, and if so, where you can include the data."

- Dutch influence in the international v2 specifications, e.g.
  - XPN – extended person name: Irma Jongeneel - de Haas
  - `Jongeneel-de Haas&de&Haas&&Jongeneel^Irma^^^Mevrouw^^L`

Local implementation of v3

Edition 2005
v3

2.1 Documents in the V3 2005 Normative Edition

The 2005 Normative Edition contains those Version 3 Standar...
Membership Level Ballot and are awaiting final ANSI Approva...

2.1.1 Foundation Documents

Foundation Documents are the basis for all of the other speci...
Standards are based. Vocabulary defines terms and code sets...
HL7 Version 3 Data Types on an abstract layer, independent o...
Localization specifies what the HL7 Technical Committees are...
process. GELLO is intended to be a standard expression langu...

- **HL7 Reference Information Model (RIM)**
- **Data Types: Abstract Specification**
- **HL7 Vocabulary**
- **Refinement, Constraint and Localization**
- **GELLO: A Common Expression Language**

Edition 2005
v3

Refinement, Constraint and Localization

ANSI/HL7 V3 RCL-2003, Release 1
10/09/2003
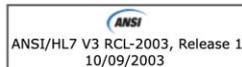
Modeling & Methodology Co-Chair	George Beeler Jr PhD. Beeler Consulting LLC
Primary Contributor	Sandy Boyer Consultant
Modeling & Methodology Co-Chair	Jane Curry Sierra Systems & CIHI - HL7 Canada
Internat'l Technical Committee, Co-Chair	Leo Fogarty, MD
Conformance Co-Chair (outgoing)	Mary Ann Juurlink Canada Health Infoway
Primary Contributor	Lloyd McKenzie IBM Canada, CIHI - HL7 Canada & Alberta Wellnet
Conformance Co-Chair	Jennifer Puyenbroek McKesson Information Solutions
Conformance Co-Chair (interim)	Peter Rontey U.S. Department of Veterans Affairs
Modeling & Methodology Co-Chair	Abdul-Malik Shakir Shakir Consulting LLC
Conformance Co-Chair	Ioana Singureanu Eversolve, Inc.

Local implementation of v3

- Key guidelines on information models and data types:
  - Localization may not add new classes, associations or attributes to the RIM. This may only be done through the established RIM harmonization process.
  - The HL7 International Affiliates may undertake localization of R-MIMs by the addition of RIM-derived classes, attributes or associations between ballot cycles. Such localization shall be subject to registration and international ballot. This form of localization is restricted to the affiliates.
  - It shall never be possible to change or create new data types, except through the formal HL7 ballot processes.
  - The HL7 International affiliates may constrain data types for region specific purposes. Such constraints are subject to registration. These constraints shall be described by added explanatory text until a formal HL7 constraint language is developed, at which time that language shall be used. This form of localization is restricted to the affiliates.

Local implementation of v3

- Key guidelines on Message Types and CMETs
  - Using the processes detailed above in section Refinement process (§ 1.2), it shall be possible to identify a new message type based on an existing R-MIM or HMD between ballot cycles. Each such identification shall be subject to Registration.
  - An HL7 International Affiliate may freely substitute CMETS developed to meet region-specific requirements provided that these changes are consistent with the intended use of those base CMET being substituted. Such substitution is subject to Registration, and restricted to the affiliates.
  - At implementation, any user may choose from a family of registered CMETs relating to the same concept, as outlined in section Common Message Element Types (CMETs) (§ 2.3.2).
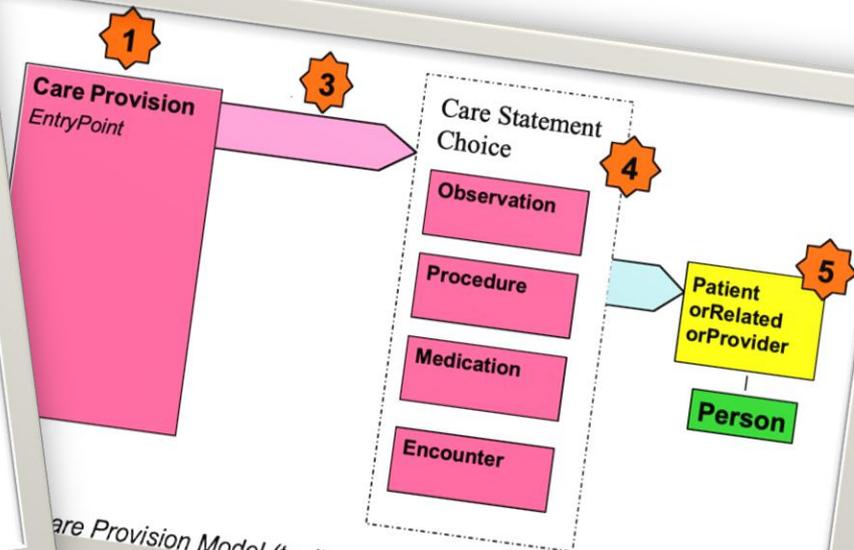
Local implementation of v3

- Key guidelines on Vocabulary
  - HL7 will maintain its vocabulary domain specifications following a harmonization process that is not subject to ballot cycle limitations. Vendors and users should follow Vocabulary Conformance (§ 4.2.1).
  - HL7 International Affiliates will establish their own procedures to define and maintain region-specific variations for vocabulary domains.

- With the responsibilities delegated here to HL7 International Affiliates, one can understand why some in the US wanted to establish their own HL7 US Affiliate – to be able to do the same things as other Affiliates.

Local implementation of v3
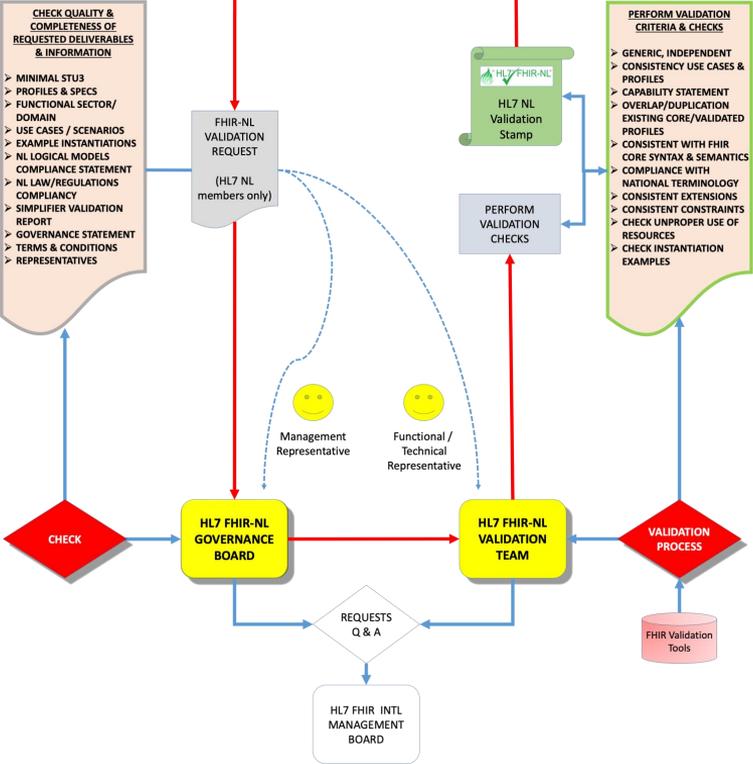

Implementatiehandleiding HL7v3 Basiscomponenten

Local implementation of FHIR

- Recognised that HL7 Netherlands would not be the author of the main HL7 FHIR Implementation Guides (experience from v3)

- Brought together three main FHIR implementers:
  - Nictiz – our digital health expertise centre in NL (also for v3)
  - Koppeltaal – an early adopter of FHIR for digital mental health solutions
  - Zorgdomein – a key player in hospital referrals, needing to migrate

- Developed a model for HL7 FHIR-NL profile validation
  - Shared with the HL7 International Affiliates community

HL7 FIHR-NL VALIDATION - ORGANIZATION AND PROCESS
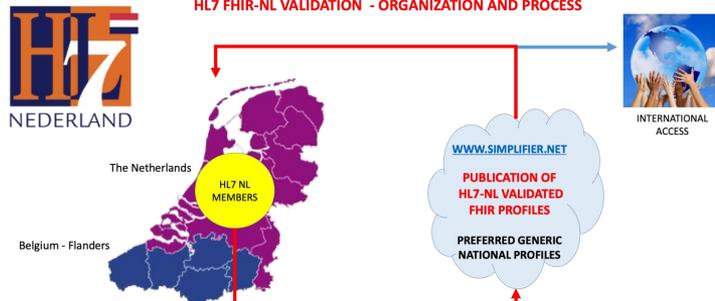
Bert Kabbes
International Council Presentation
Hyatt Regency LaJolla, San Diego
September 2017

HL7
Netherlands

STANDARDS
Overview

COURSES
Possibilities

CURRENT
Overview

AGENDA
Events & Training

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Ask your question

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HL7 MEMBERS
Info for members

HL7 FHIR®: the international standard for interoperability in healthcare   +

Why is validation of HL7 FHIR profiles essential?   +

How do I submit a validation request and what is the procedure?   +

Why is validation of HL7 FHIR profiles essential?   +

Are there any costs associated with having it validated?   +

What are the benefits of validation?   +

Is the validation procedure international?   +

Where can I find further information about the validation procedure and working method?   +

Guidelines for Organizations and Procedures HL7 FHIR-NL

Schematic representation of the validation procedure (English)

To process

Local implementation of FHIR

Current IPS localization discussion

- Why are local Patient Summary implementations necessary and when can they claim conformance with the IPS?
  - The Patient Summary needs to conform to the national FHIR core
  - The Patient Summary needs to conform to the HL7 FHIR IPS IG
  - Local implementations need to be able to consume IPS conformant patient summaries from other realms

- What will be the translation / transcoding requirements?

- https://projects.jira.snomed.org/browse/IPS-242

My Journey with Bert Kabbes 1991-2025

- Episode 1:
  - 1991 Digital Equipment Corp. Was HL7 Implementer with one of the first Communication Engines: HealthView with mock-up clinical WS
  - 1992 First joint student on HL7 V2.1 -> Bert Kabbes Scholarship 2026
  - 1993 Implementation at Eemland Hospital Lab and Radiology as Pilot Clinical Workstation
  - 1993 First Technical Committee with mostly vendors and some hospitals in NL with the first IG
  - 1996 moved to Germany and continued with HCI's Cloverleaf, but always stayed in contact and met at the international events until we met again at VWS in 2020 where Bert worked marketing FHIR as the Standard (FHIR besluit)
- Working with Bert instilled a yearning in me to work on standards with like-minded volunteers, who all shared Berts vision that better healthcare is based on better Information Exchange and Availability.

HL7®
Netherlands

My Journey with Bert Kabbes 1991-2025

- Episode 2:
  - 2020 MoH (VWS) when the EGIZ legislation was prepared Bert was still present and talking about the HL7 Standards V2.x and CDA, and adding the role of FHIR
  - **1. The Context: From HL7 v3 to FHIR (2012–2015)** A key breakthrough was the creation of **zibs** (Zorginformatiebouwstenen or Health and Care Information Models) validated against FHIR
  - **2. The Catalyst: MedMij (2015–2018)** MedMij chose FHIR as its exchange standard
  - **3. The Official "FHIR-besluit" (2023)** official mandate by Law (WEGIZ) as an early EHDS pre-cursor
  - **4. Current State: The Layered Model**
    - **Zib profiles technical translations FHIR STU3-zib2017 & FHIR R4-zib2020**
    - **Nl-core like BSN**
    - **Use case profiles MedMij, VIPP. BabyConnect**

FHIR Profile Validation Process chaired by Bert

- **1. The Three-Layer Validation Model**
  - **Base FHIR Specification:** Ensures the technical "grammar" (JSON/XML structure) is correct.
  - **NL-Core Profiles:** Validates Dutch-specific extensions, such as the **BSN (Citizen Service Number)** and name slicing.
  - **Use-Case Layer:** Enforces rules for specific programs like **MedMij**, **VIPP**, or **eOverdracht** (e.g., "MustSupport" fields).

- **2. Technical Validation Components**
  - **StructureDefinitions:** The digital blueprints from **Nictiz** that define the constraints for each **zib**.
  - **Terminology Services:** Validates that medical codes belong to the correct Dutch **ValueSets** (SNOMED CT, LOINC, or Lab codes).
  - **Business Rules:** Custom logic (often via **FHIRPath**) to check dependencies, such as "If a patient is deceased, a death date must be present."

- **3. The Validation Process ($validate)**
  - **Input:** The FHIR Resource and the target **Profile Canonical URL**.
  - **Cardinality Check:** Ensures mandatory elements (like "Patient Name") are not missing.
  - **Slice Validation:** Checks if Dutch name prefixes (e.g., "van der") are correctly separated from the surname.
  - **Output:** Generates an **OperationOutcome** report listing all Errors, Warnings, and Information notes.

- **4. Common Dutch Validation Pitfalls**
  - **BSN 11-test (Elfproef):** Automated rejection if the Citizen Service Number is mathematically invalid.
  - **Slicing Errors:** Incorrectly mapping "Family Name" and "Partner Name" in the Dutch naming convention.
  - **Version Mismatch:** Validating a **zib 2017** resource against a **zib 2020** profile.

Affiliate Maturity Lifecycle

Affiliates

1. Raising awareness
   - Pioneer phase
2. Consensus based localisation
   - Volunteers create a localised specification
3. Paid development
   - In the context of regional or national projects
4. Official Endorsement
   - Government mandates, national / European level
5. Standards Collaborative
   - Tight integration of SDOs

Scope of interoperability efforts

1. Within hospital departments
   - Lab devices, 1970+
2. Within hospitals
   - Between departments, DICOM, HL7 version 2, IHE Radiology, 1980+
3. Within healthcare regions
   - IHE XDS, CDA, 2005+
4. National level exchanges
   - 2010+
5. International exchanges
   - epSOS / EHDS, 2015+

https://www.ringholm.com/column/HL7_membership_model.htm

HL7 Europe post 2025→

- EHDS will change the role of Affiliates:
  - common European Standards to comply with based on the International standards (HL7 V2.x, FHIR Implementation Guides but also SNOMED CT, LOINC, UCUM, DICOM etc.)

- EHDS will change the role of HL7 Europe:
  - Putting these standards in European Implementation Guides while safeguarding the relationship with HL7 International versions
  - Helping the European Affiliates comply with this across all member states (EAC)

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- **… and what he can teach us (panel)**

    - *Alexander Henket, Nictiz*
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    - *Kai Heitmann, HL7 Germany*

- **Observations / reflections / questions from the audience**

- **Closing and next steps**

Moderator: Michael Strübin, HL7 Europe

Alexander Henket

Interoperability Specialist

alexander.henket@nictiz.nl

Over 25 years of experience

Interoperability Specialist at Nictiz, competence centre for digital information management in healthcare

Active member of HL7 Netherlands, HL7 Europe and HL7 International

Member of IHE NL

Nictiz

Bert Kabbes and HL7 Europe

Catherine Chronaki
Secretary General, HL7 Europe

Bert Kabbes
and HL7 Germany

Kai Heitmann,
HL7 Europe and HL7 Germany

The founding fathers of HL7 Affilates at all

Communitas Perpetua

Bert Kabbes
1946-2025

Joachim Dudeck
1932-2010

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Closing and next steps

- Bert Kabbes scholarship

- Writing the history of HL7 in Europe:
  https://confluence.hl7.org/spaces/HEU/pages/413045959/A+History+of+HL7+in+Europe

HL7
Europe

Thank you !