**Arden Syntax Implementation Guide**

**Release 3**

**Outline**

**Approved by the Arden Syntax WG on 2019-01-14**

NB: The outline of the Arden Syntax IG R2 is preserved for R3 with the addition of two new chapters and material in existing chapters:

1. Purpose

2. Notes and Disclaimer

3. Arden Syntax: Context and History

4. Syntax Description

4.1. Fundamentals

4.2. Language Concepts

4.2.1. Data Types

4.2.2. Statements

4.2.3. Expressions

4.2.4. Operators

5. Basic Tasks (by Example)

5.1. Sort a List of Objects

5.2. Convert String to DateTime

5.3. Calculate the Current Age in Years from a Given Birthday

5.4. MLM-to-MLM Interaction

6. Programming / Engineering Use Cases

6.1. Guidelines

7. System-Level Engineering Use Cases

7.1. Standards-Based Stack for Connecting Arden-Syntax-Based Applications to an EHR

7.2. Integrating CDS in PDMS with Minimal Effort

7.3. Integrating CDS in a Commercially Available PDMS Using Proprietary Interfaces

 7.4. Using Arden Syntax in a service-oriented architecture

8. Clinical Use Cases

8.1. Drug‒Disease Interaction

8.2. Body Mass Index

8.3. Abnormal Test Result Detection

8.4. Detection of Possible Patient Deterioration

8.5. Least Squares Linear Regression

8.6. Calculate Creatinine Clearance and Glomerular Filtration Rate

8.7. Hepatitis A Immunization

 8.8. Order manipulation: New (author = Haug)

9. Standard Data Models and Data Access: New (Author = Jenders)

 9.1. Define data models and explain their role in CDS and Arden Syntax

 9.2. Role of terminologies: Pre-/Post-coordination, inheritance

 9.3. Current Arden Syntax data model

 9.4. FHIR: Advantages and Disadvantages

 9.4.1: Define FHIR

9.4.2: Use of terminologies in FHIR and related work in CIMI.

9.4.3: How FHIR might be used in Arden Syntax with and without

 terminology binding.

 9.5. Examples

10. Representation of Business Processes: New (Author = Haug)

 10.1. Define clinical business process and its relationship to CDS.

 10.2. Introduction to OMG Standards for Business Process Management

(BPMN, DMN, CMMN)

 10.3. Potential Relationship of OMG Standards to Arden Syntax

 10.4. Examples

11. Preview of Arden 3.0: The Curly-Braces Challenge and Other Standards

12. F.A.Q.

13. References