DDF Phase 4 Public Information Webinar

2nd July 2024

Bill Illis, Novartis, DDF Workstream Lead
John Owen, CDISC
Dave Iberson-Hurst, CDISC
Berber Snoeijer, CDISC

DRAFT

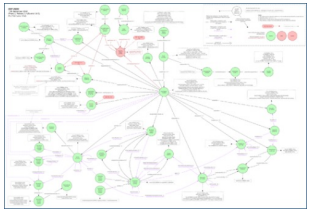
Digital Data Flow

An Overview

For CDISC DDF Phase 4 Public Webinar

July 2, 2024

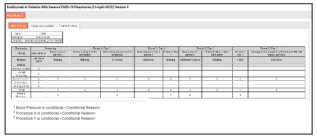
DDF Initiative encompasses Technical Standards & Solutions, Change Management, and Industry Engagement



cdisc

Unified Study Definitions Model (USDM) Reference Architecture

TransCelerate's Study Definitions Repository (SDR) Reference Implementation



Digital Data Flow Initiative

Suite of DDF Adoption Resources, Videos & Change Management Tools

Continued Industry Collaboration between TransCelerate, CDISC ICH, and HL7

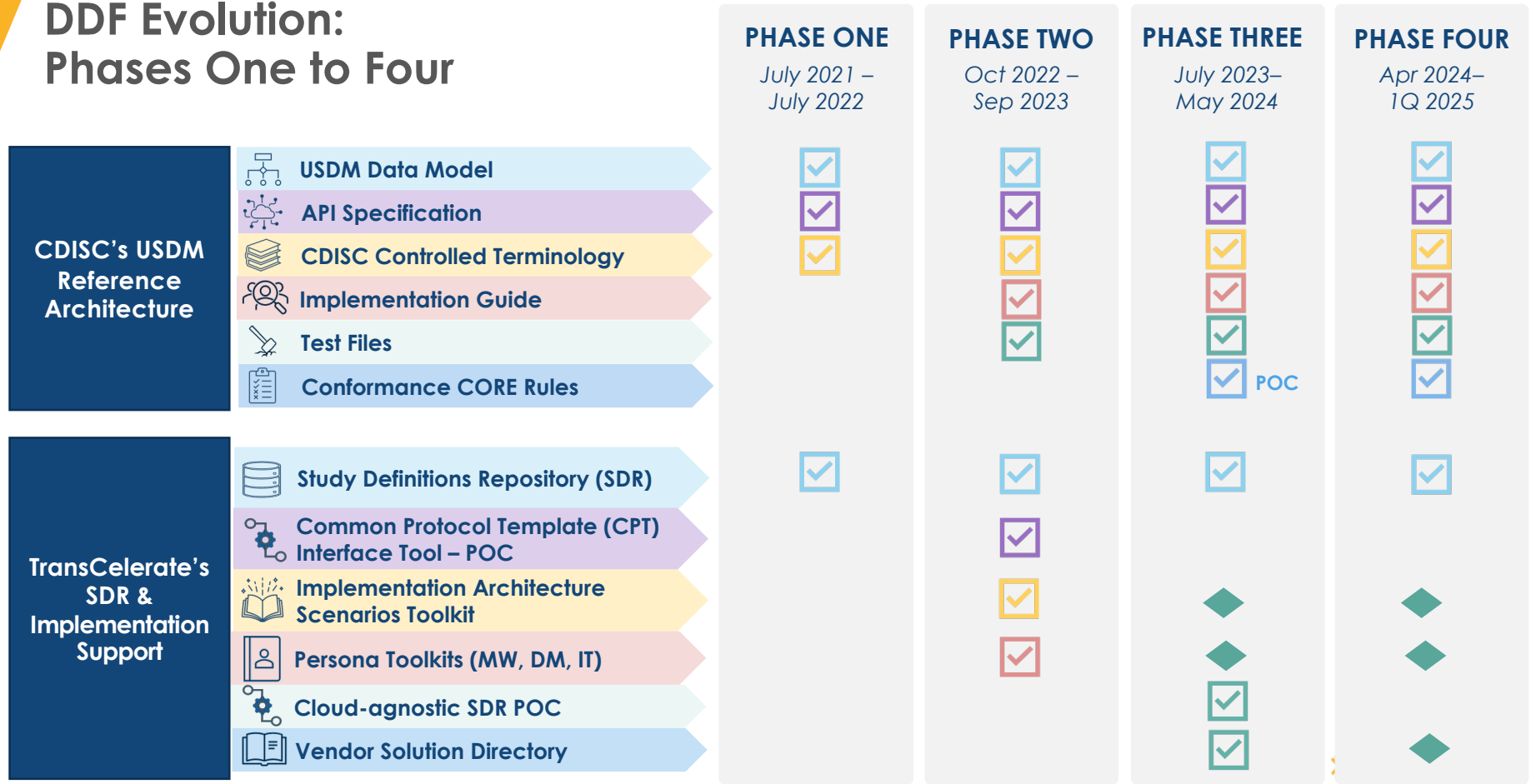
VULCAN HL7 FHIR · cdisc · TransCelerate BIOPHARMA INC. · HL7 International · ICH harmonisation for better health

Growing Solution Collaboration Forum (SCF)*

Target Health · EQTYLAB · Medable · faro · CGD Health · Inductive Quotient · saama · NIHPO · REDCAP CLOUD · InteliNotion · MEDIDATA · OPEN STUDY BUILDER · nurocor · formedix · Sycamore Informatics · Taimei · TriNetX · tenXclinical · ArborSys · merative · PHARMASEAL · ORACLE · castor · indegene · THREAD RESEARCH · trials.ai · ZS Associates · TRYAL

*Company logos illustrate current involvement and are not used to imply endorsement of specific vendors for DDF or to identify a comprehensive list of all actual or potential future participants in DDF.

DDF Evolution: Phases One to Four



TransCelerate BIOPHARMA INC.

DDF Use Cases

From machine actionable Protocol authoring to automation of downstream connectivity

Study Design → **Study Start-up** → **Study Execution / Data Acquisition** → **Analysis & Reporting** → **Regulatory Submission Enablement**

Protocol development to approval

Connectivity to downstream systems

Use cases to improve study design and analytics

- Predictive model - likelihood of Amendments
- Ingestion and mining of retrospective protocol data
- Compute protocol complexity, site burden, etc
- Optimizing Inclusion / Exclusion Criteria
- Determine study feasibility including subject recruitment

Use cases to automate downstream processes and enable E2E traceability

- Setup of data capture systems
- Generation of SDTM Trial Design datasets
- Provision of study information to a Clinical Trial Registry
- Publishing Protocol Data into different document templates/views
- Update CTMS, TMF, and other downstream systems

*"**As a medical writer**, the digitalization of data flows enables me to work faster with my team on one dedicated system, accessing study content in a single digital study design system.*

*"**As a data manager**, the digitalization of end-to-end processes from study design to EDC generates structured data that can be leveraged to track outcomes and progress made.*

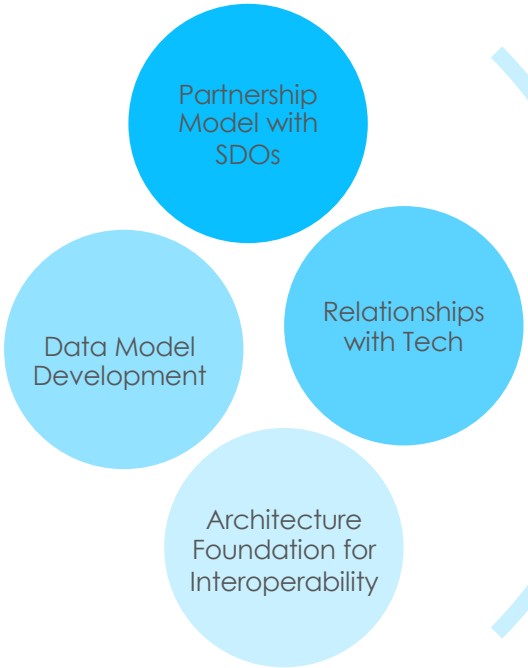
*"**As a technical expert**, the digitalization of data flows reduces tedious manual work freeing up time for more complex projects that cannot be automated (value-added activities focus).*

TransCelerate BIOPHARMA INC.

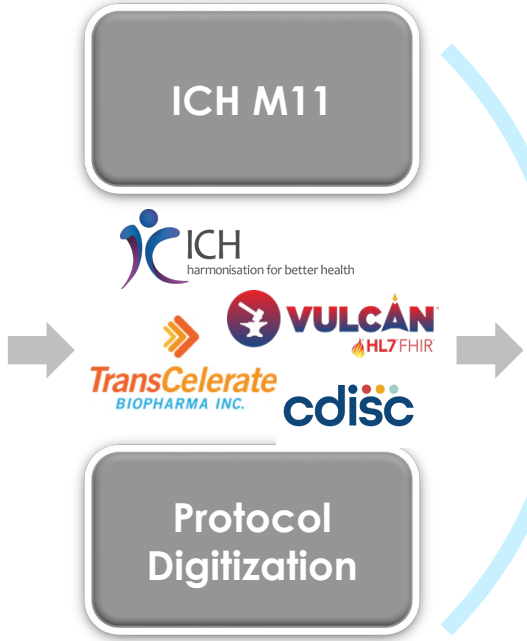
Collaboration amplifies Value of Multiple Initiatives

ICH M11, Vulcan, CDISC, TransCelerate collaborate on Digital Protocol

Capabilities, expertise, and relationships built to date across multiple projects



collaborating to maximize synergies & collective resources



will extend the value of multiple initiatives across the ecosystem

- Regulatory-driven implementation of Harmonized Protocol Guideline
- Regulator Receipt of Digitized Protocol (USDM + FHIR)
- Operational & EHR-related Uses of Digitized Protocols

TransCelerate BIOPHARMA INC.

Additional Opportunities to Stay Involved with DDF

You can stay involved and learn more about the Digital Data Flow initiative by visiting the following websites:

DDF Website

As the main website for DDF, learn and access all resources supporting DDF

Scan QR Code to explore DDF Website

CDISC DDF Website

Learn about and access the Unified Study Definitions Model (USDM) Reference Architecture supporting Protocol Standards.

TransCelerate DDF Initiative Solutions

Learn about DDF initiative background and roadmap

DDF GitHub Repos

Learn about and access the Study Definitions Repository Reference Implementation and supporting codebase

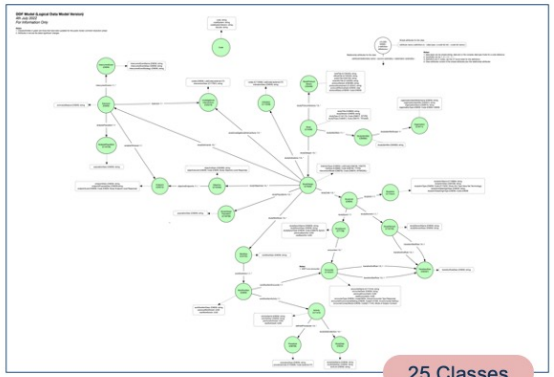
Questions? Feedback? Please email us at
DDF@transceleratebiopharmainc.com

TransCelerate BIOPHARMA INC.

Introduction

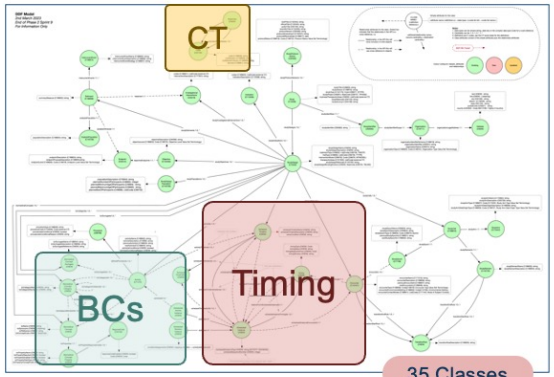
CDISC DDF / USDM: Phases One, Two and Three

Phase One



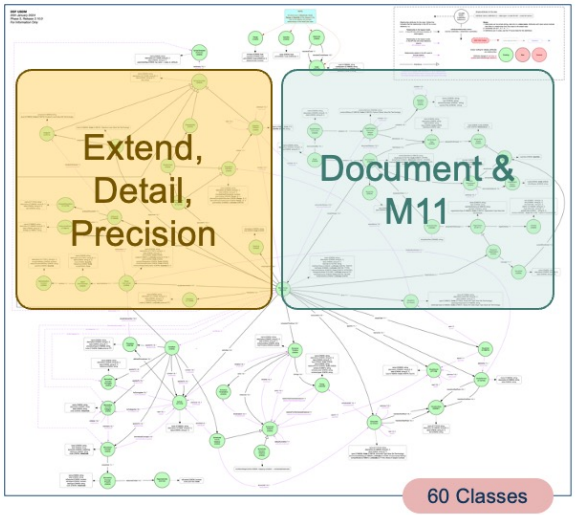
- Solid foundation
- The protocol document was an external entity into which the structured content could be exported

Phase Two



- Focused on the structured elements of the protocol, e.g. the Schedule of Activities (SoA) & BCs
- The protocol document still an external entity

Phase Three



- Now contains structured and unstructured elements
- The entire protocol document can be held within the USDM
- Allows for the protocol document to be generated from the model

Phase Four Focus

1. **USDM Enhancements** Further IDMP Alignment, M11 amendments and versions, complex studies designs such as multiphase seamless designs, additional trial registration mappings, and statistical / estimands enhancements
2. Continued alignment of USDM with ICH M11
3. Participation in the Utilizing the Digital Protocol (UDP) project with TransCelerate, ICH and HL7 Vulcan
4. Continue development of USDM Conformance Rules to support USDM v3.0 and v4.0
5. Continue support and development of test data and test tools
6. Development of training and education materials in conjunction with TransCelerate's Change and Engagement team to foster adoption of DDF
7. Trial Master File (TMF) and ensuring the initial needs of TMF are accommodated within the USDM

Unified Study Definitions Model (USDM) Reference Architecture (RA)

DDF RA Phase Four Deliverables

Unified Study Definitions Model (USDM) Class Diagram
The UML class diagram (normative) as well as SQL Data Dictionary, Entity Relationship Diagram and example JSON output (informative)

Application Programming Interface (API) Specification
The API definition (normative) in JSON and HTML forms

CDISC Controlled Terminology
The controlled terminology (normative) developed for the project. Provided in an Excel format so as to be easily searched and filtered.

Test Files
Examples of USDM JSON files

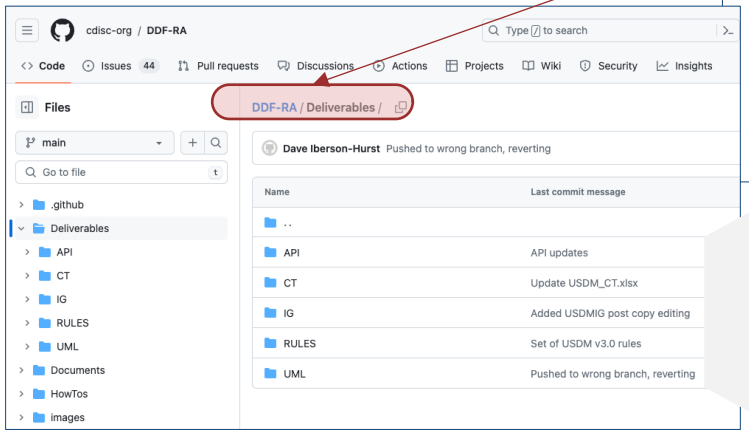
Implementation Guide
Explanation of the model and its use, examples etc

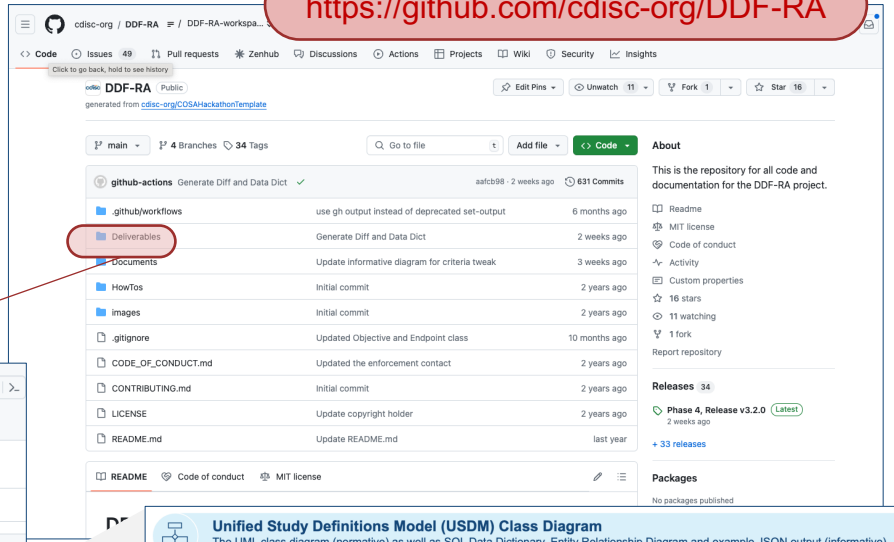
Conformance Rules
Specification of the CDISC CORE rules required for USDM conformance

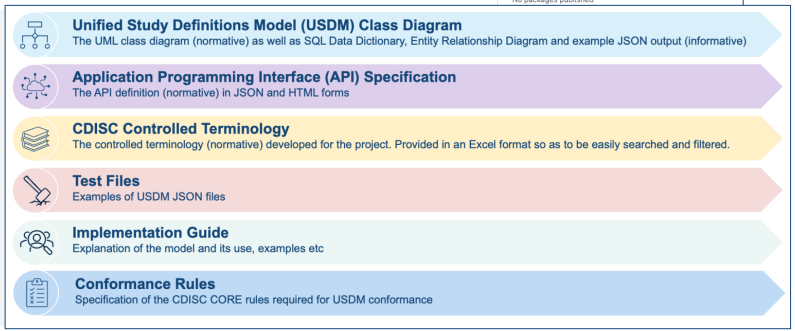
DDF Reference Architecture Github

- The source of DDF Reference Architecture deliverables

https://github.com/cdisc-org/DDF-RA

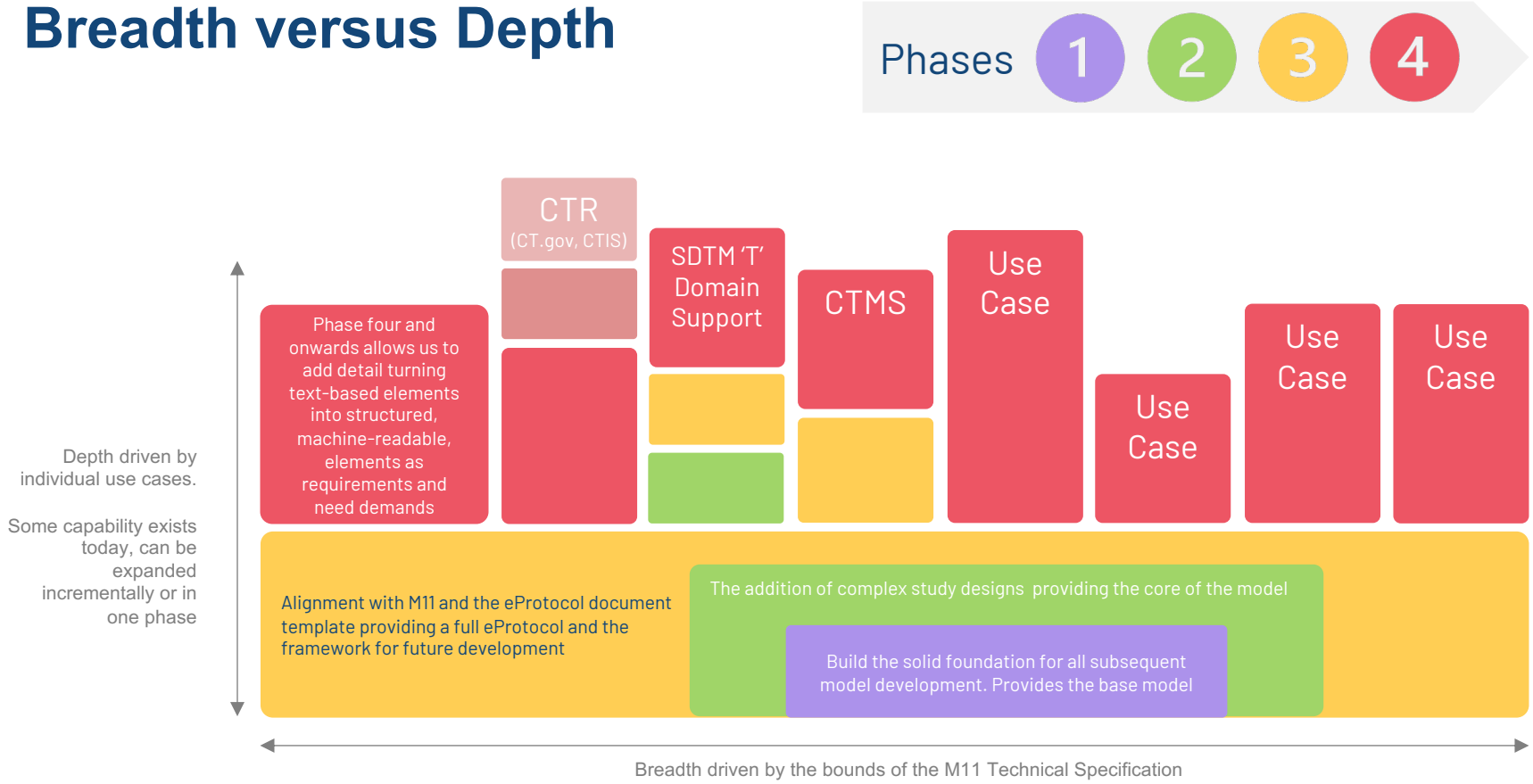






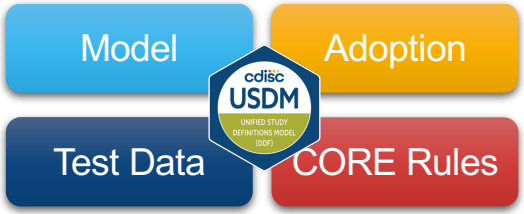
USDM Phase 4 Scope

Breadth versus Depth



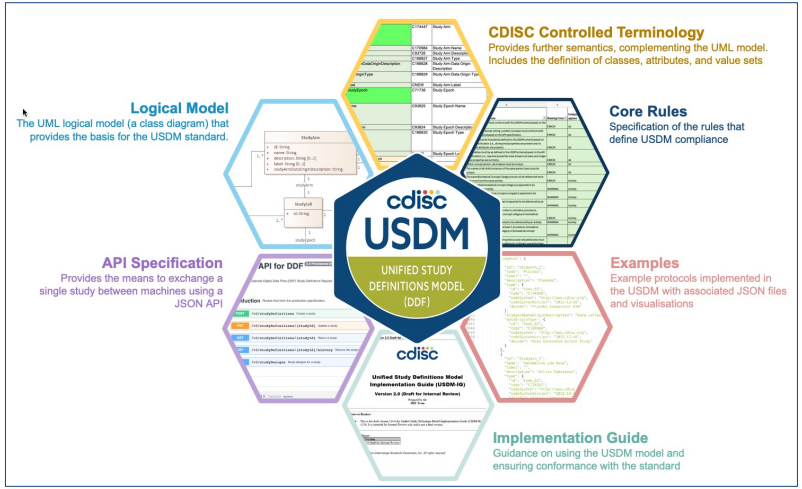
Phase 4 Overview

- More focus on refinement rather than new content
- Need to pay attention to backward compatibility
- ICH M11 is, obviously, still important
- Model rules and CORE are now part of the standard

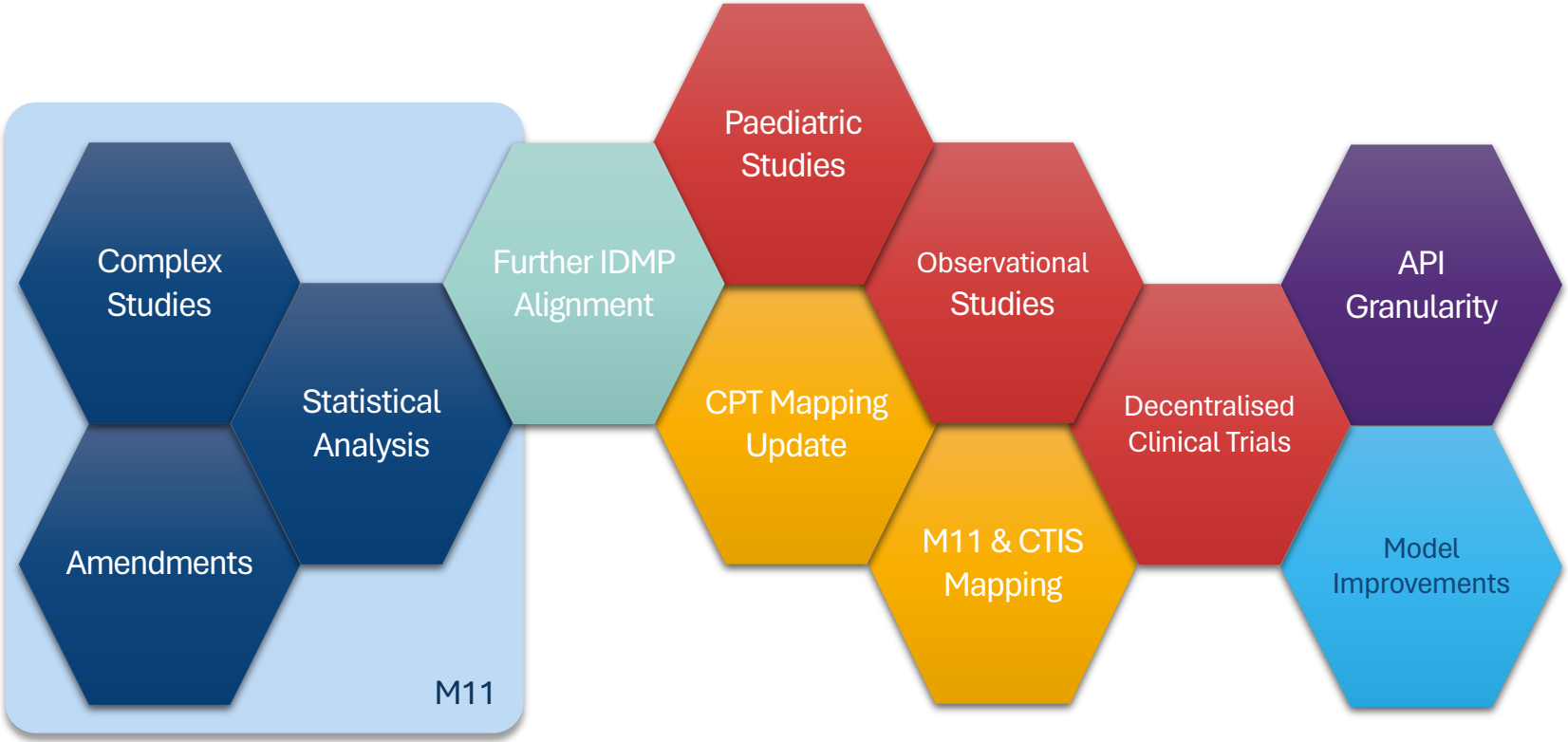


Phase Four Focus

1. USDM Enhancements Further IDMP Alignment, M11 amendments and versions, complex studies designs such as multiphase seamless designs, additional trial registration mappings, and statistical / estimands enhancements
2. Continued alignment of USDM with ICH M11
3. Participation in the Utilizing the Digital Protocol (UDP) project with TransCelerate, ICH and HL7 Vulcan
4. Continue development of USDM Conformance Rules to support USDM v3.0 and v4.0
5. Continue support and development of test data and test tools
6. Development of training and education materials in conjunction with TransCelerate's Change and Engagement team to foster adoption of DDF
7. Trial Master File (TMF) and ensuring the initial needs of TMF are accommodated within the USDM



Model Updates - Overview



Model Updates

M11 Dependent Changes

- Ensure support for master, umbrella, multi-phase seamless, and other complex designs is sufficient
- Ensure USDM accommodates the latest M11 updates re. statistical analysis changes
- Ensure USDM accommodates the latest M11 updates re. amendment changes

Identification of Medicinal Products (IDMP)

- Ensure we have good alignment

API Granularity

- Consider a more granular API to facilitate adoption and tool integration

Model Improvements

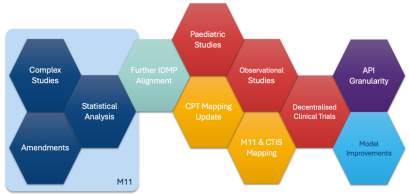
- CT definitions and extensibility
- Support for multiple document templates

Study Type Support

- Ensure support for a wider range of study types

Mappings

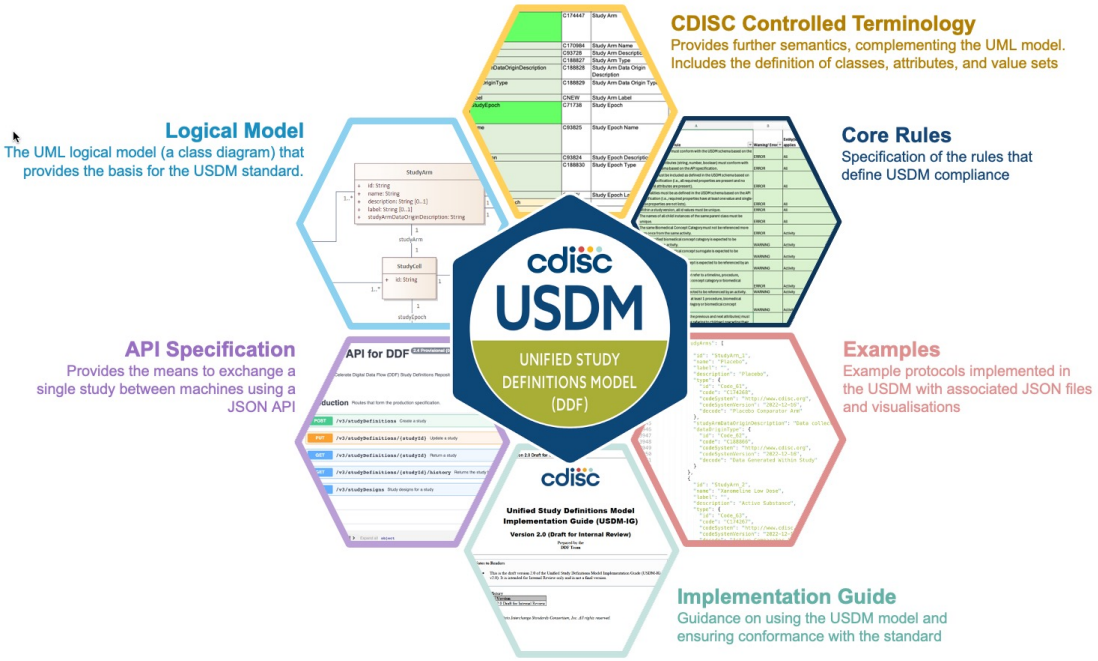
- Update CPT mapping
- Complete mapping to M11 and include EU Clinical Trial Information System (CTIS)



Adoption

Adoption and Feedback

- SoA Views
  - What is USDM capable of supporting, options etc
- Trial Master File
  - Downstream use of USDM
- Sponsor / Vendor feedback
  - Treat as review comments
- Automation versus Analytics
  - The prospective versus retrospective use of the model



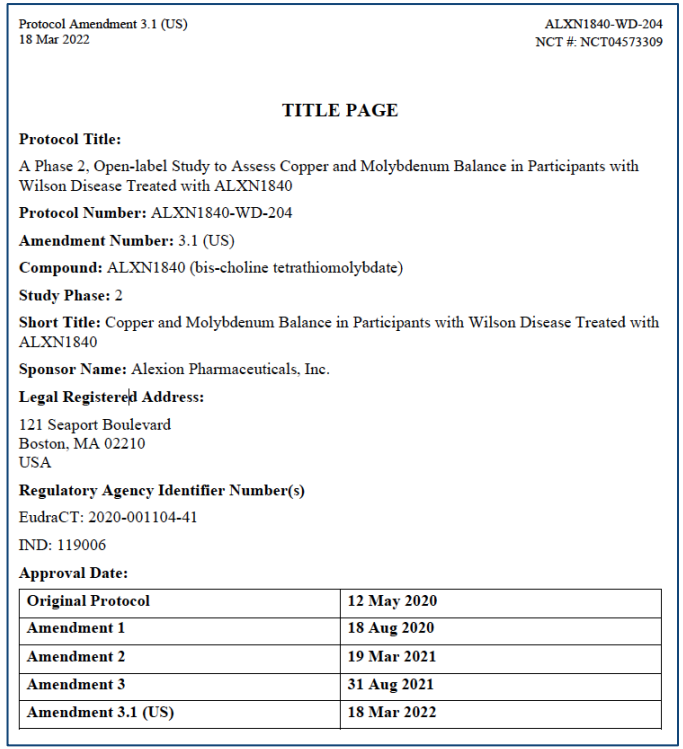
Adoption and Training

- Opportunity to test the model
- Two PHUSE workshops
  - Birmingham, UK
  - Washington DC, US
- One full-day workshop at the CDISC European Interchange in Berlin
- CDISC US Interchange
  - Workshop scheduled
- PHUSE EU Connect, Strasbourg
  - Workshop scheduled

Test Data

Test Data

- Currently two studies aligned with USDM Version 3
  - “CDISC Pilot”, Lilly LZZT
  - Lilly Diabetes
- One study used for Workshop at Berlin Interchange
  - Needs a check / review
  - USDM V3
- Have LZZT using M11 presentation / template
  - Needs a little work
  - Note, same logic, different document template
- A further study needs an update from USDM V2 to V3
  - Roche study
- Then we will do:
  - Complex Sponsor
  - Observational example
- And then …
  - Live at the CDISC Interchange …



Protocol Amendment 3.1 (US)
18 Mar 2022

ALXN1840-WD-204
NCT #: NCT04573309

TITLE PAGE

Protocol Title:

A Phase 2, Open-label Study to Assess Copper and Molybdenum Balance in Participants with Wilson Disease Treated with ALXN1840

Protocol Number: ALXN1840-WD-204

Amendment Number: 3.1 (US)

Compound: ALXN1840 (bis-choline tetrathiomolybdate)

Study Phase: 2

Short Title: Copper and Molybdenum Balance in Participants with Wilson Disease Treated with ALXN1840

Sponsor Name: Alexion Pharmaceuticals, Inc.

Legal Registered Address:

121 Seaport Boulevard
Boston, MA 02210
USA

Regulatory Agency Identifier Number(s)

EudraCT: 2020-001104-41

IND: 119006

Approval Date:

Original Protocol	**12 May 2020**
Amendment 1	**18 Aug 2020**
Amendment 2	**19 Mar 2021**
Amendment 3	**31 Aug 2021**
Amendment 3.1 (US)	**18 Mar 2022**

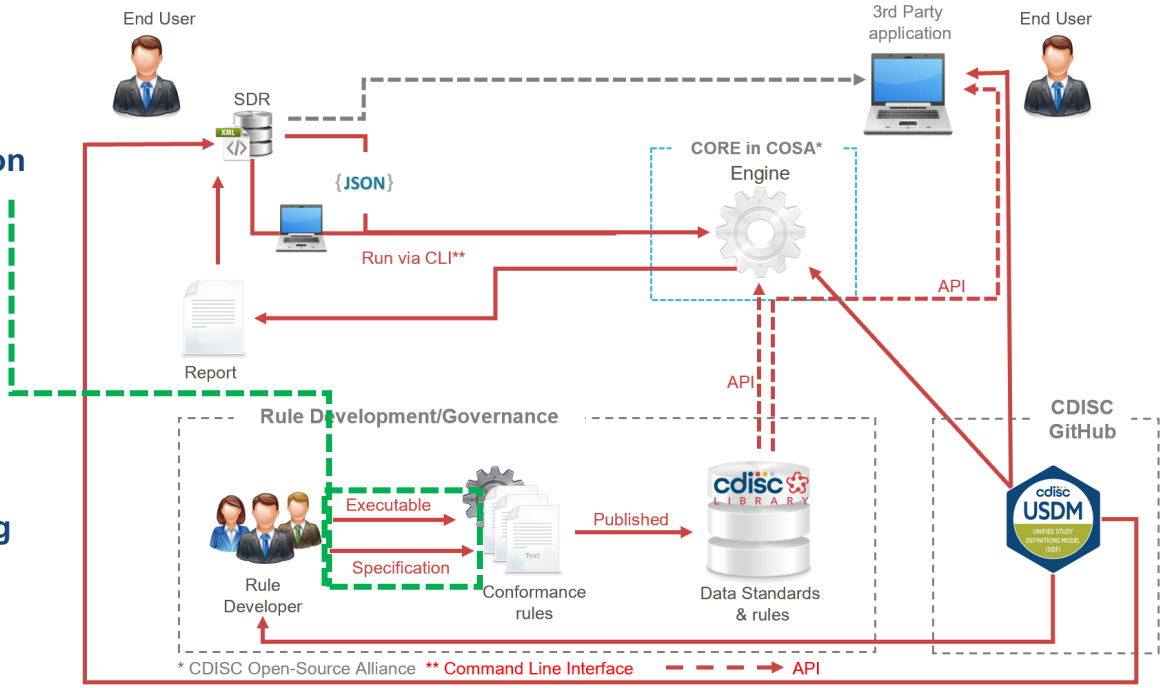
6 to 8 Studies

Conformance Rule Development

DDF 3 and CORE

DDF 4 will initially focus on development of the rule specifications to support USDM v3.0 and v4.0

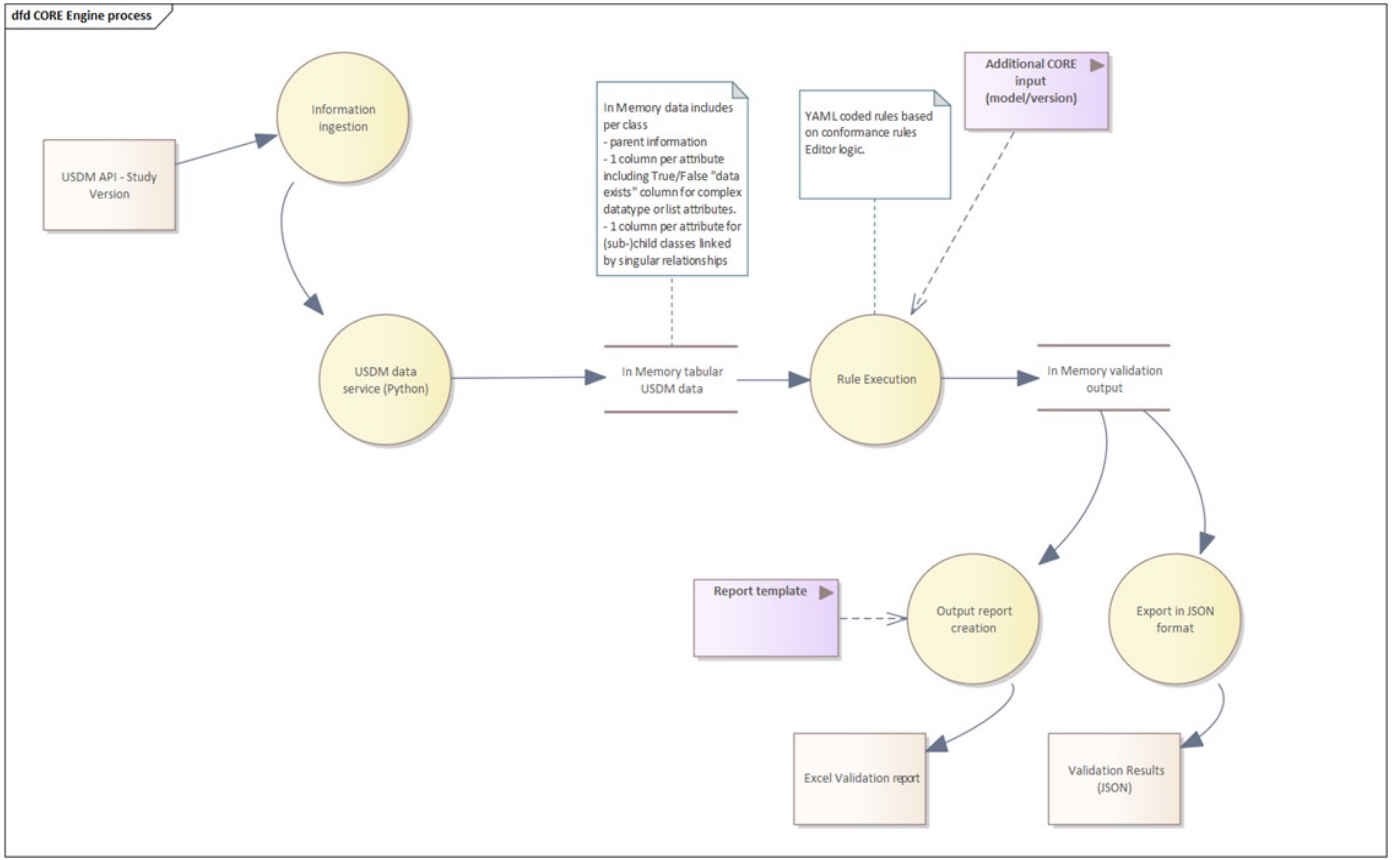
Additional DDF 4 conformance rule work may be conducted during Phase 4 in order for the CORE engine to run all DDF rules



Conformance Rule Development

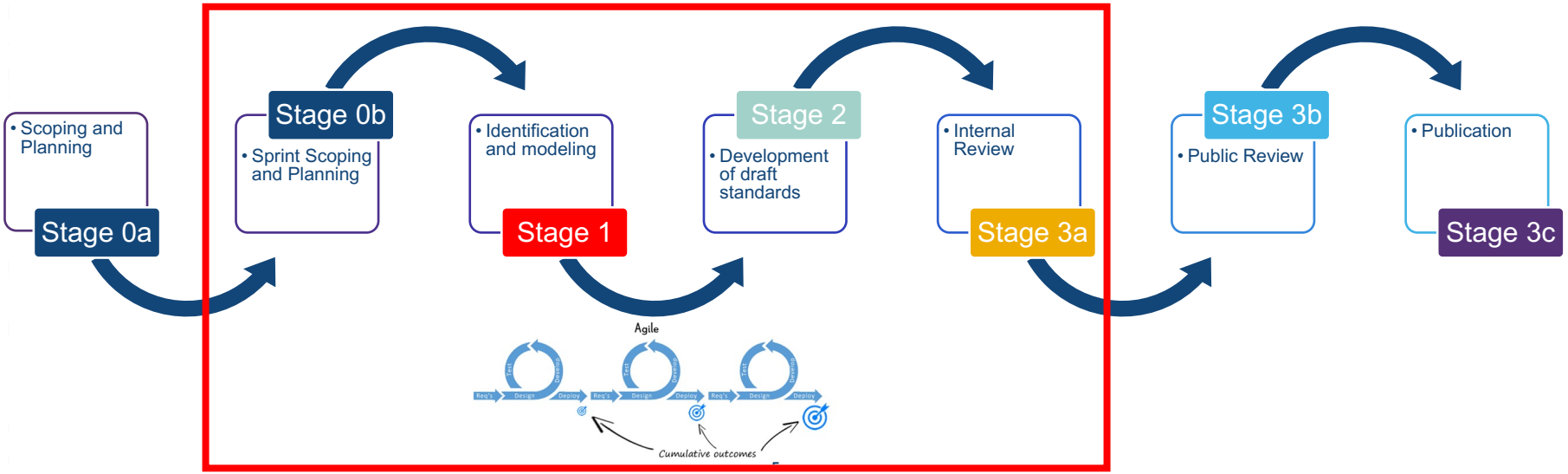
- Phase 3
  - Updated CORE engine to enable uptake of USDM API
  - Created test template to enable technical implementation of rules using YAML in rule editor
  - Improved technical capabilities for implementing rules like combining datasets
  - Identified additional technical capabilities that are needed for implementing all rules
- Phase 4
  - Define full set of USDM v3.0 rules
  - Define full set of USDM v4.0 rules alongside with model improvements
  - Technical implementation of rules if technically feasible with current rules
- Future updates
  - Enable direct JSON checks
  - Enable JSON schema checks
  - Enable XML checks
  - Update CORE report template to USDM format
  - Add more technical capabilities to enable all USDM checks

USDM CORE process



Process and Timelines

CDSIC Standards Development Process (COP-001)



Parts of Stage 0b – 3a take place for each draft release.

- After Stage 0a, the sprints begin and a small scoping effort happens as part of the planning for each sprint
- An Inernal review step happens after each draft release.

Development and Review

2024

Day	Date	Week #	Stage		Sprint #
Wednesday	17-Apr-24	1	Scoping		
Wednesday	24-Apr-24	2	Scoping		
Wednesday	01-May-24	3	Scoping	Development Sprints	1
Wednesday	08-May-24	4	Scoping	Development Sprints	1
Wednesday	15-May-24	5	Scoping	Development Sprints	2
Wednesday	22-May-24	6	Scoping	Development Sprints	2
Wednesday	29-May-24	7	Scoping	Development Sprints	3
Wednesday	05-Jun-24	8	Scoping	Development Sprints	3
Wednesday	12-Jun-24	9	Scoping	Development Sprints	4
Wednesday	19-Jun-24	10	Scoping	Development Sprints	4
Wednesday	26-Jun-24	11	Scoping	Development Sprints	5
Wednesday	03-Jul-24	12	Scoping	Development Sprints	5
Wednesday	10-Jul-24	13	Scoping	Development Sprints	6
Wednesday	17-Jul-24	14		Development Sprints	6
Wednesday	24-Jul-24	15		Development Sprints	7
Wednesday	31-Jul-24	16		Development Sprints	7
Wednesday	07-Aug-24	17		Development Sprints	8
Wednesday	14-Aug-24	18		Development Sprints	8
Wednesday	21-Aug-24	19		Development Sprints	9
Wednesday	28-Aug-24	20		Development Sprints	9
Wednesday	04-Sep-24	21		Development Sprints	10
Wednesday	11-Sep-24	22		Development Sprints	10
Wednesday	18-Sep-24	23		Development Sprints	11
Wednesday	25-Sep-24	24		Development Sprints	11
Wednesday	02-Oct-24	25		Development Sprints	12
Wednesday	09-Oct-24	26		Development Sprints	12
Wednesday	16-Oct-24	27		Development Sprints	13
Wednesday	23-Oct-24	28	3 wk	Development Sprints	13
Wednesday	30-Oct-24	29		Development Sprints	13
Wednesday	06-Nov-24	30		Development Sprints	14
Wednesday	13-Nov-24	31	3 wk	Development Sprints	14
Wednesday	20-Nov-24	32		Development Sprints	14
Wednesday	27-Nov-24	33		Development Sprints	15
Wednesday	04-Dec-24	34		Development Sprints	15
Wednesday	11-Dec-24	35		Development Sprints	16
Wednesday	18-Dec-24	36		Development Sprints	16
Wednesday	25-Dec-24	37		CDISC Closed	
Wednesday	01-Jan-25	38		CDISC Closed	

Development

Continuous Internal Review

2025

Day	Date	Week #	Stage	Sprint #
Wednesday	01-Jan-25	38	CDISC Closed	
Wednesday	08-Jan-25	39	Development Sprints	17
Wednesday	15-Jan-25	40	Development Sprints	17
Wednesday	22-Jan-25	41	GGG Approval	18
Wednesday	29-Jan-25	42	GGG Approval	18
Wednesday	05-Feb-25	43	Public Review	19
Wednesday	12-Feb-25	44	Public Review	19
Wednesday	19-Feb-25	45	Public Review	20
Wednesday	26-Feb-25	46	Public Review	20
Wednesday	05-Mar-25	47	Fix Sprints	21
Wednesday	12-Mar-25	48	Fix Sprints	21
Wednesday	19-Mar-25	49	Fix Sprints	22
Wednesday	26-Mar-25	50	Fix Sprints	22
Wednesday	02-Apr-25	51	QC Sprint	23
Wednesday	09-Apr-25	52	QC Sprint	23
Wednesday	16-Apr-25	53	GGG Approval	
Wednesday	23-Apr-25	54	Publication	

Public Review

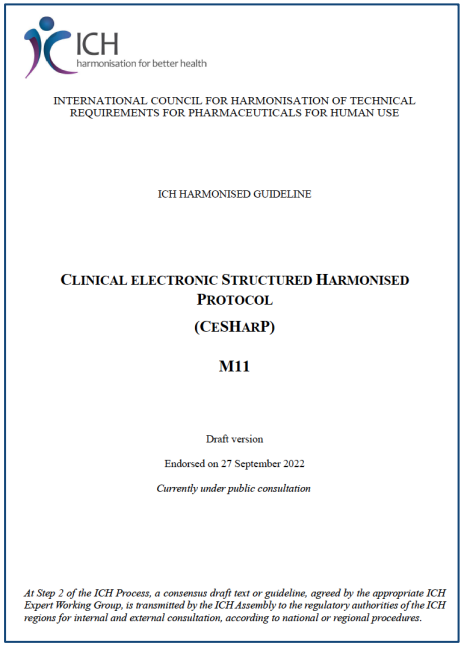
USDM v4.0

ICH M11

M11 Is …

ICH CLINICAL ELECTRONIC STRUCTURED HARMONISED PROTOCOL (CeSHarP)

https://www.ich.org/page/multidisciplinary-guidelines



ICH harmonisation for better health

INTERNATIONAL COUNCIL FOR HARMONISATION OF TECHNICAL REQUIREMENTS FOR PHARMACEUTICALS FOR HUMAN USE

ICH HARMONISED GUIDELINE

CLINICAL ELECTRONIC STRUCTURED HARMONISED PROTOCOL

(CESHARP)

M11

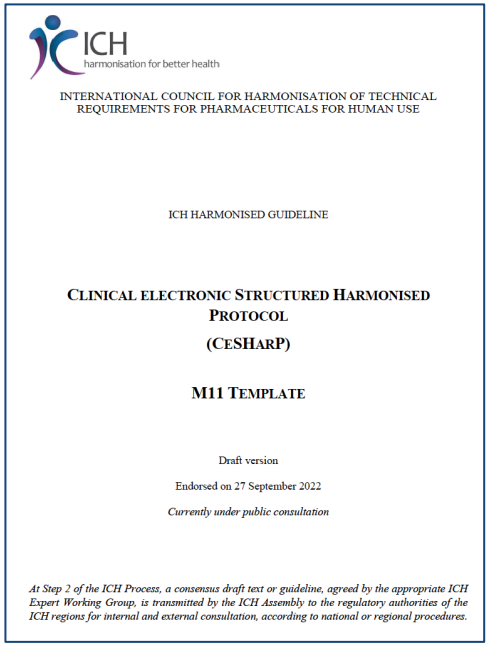
Draft version

Endorsed on 27 September 2022

Currently under public consultation

At Step 2 of the ICH Process, a consensus draft text or guideline, agreed by the appropriate ICH Expert Working Group, is transmitted by the ICH Assembly to the regulatory authorities of the ICH regions for internal and external consultation, according to national or regional procedures.

Defines the background, purpose and scope



ICH harmonisation for better health

INTERNATIONAL COUNCIL FOR HARMONISATION OF TECHNICAL REQUIREMENTS FOR PHARMACEUTICALS FOR HUMAN USE

ICH HARMONISED GUIDELINE

CLINICAL ELECTRONIC STRUCTURED HARMONISED PROTOCOL

(CESHARP)

M11 TEMPLATE

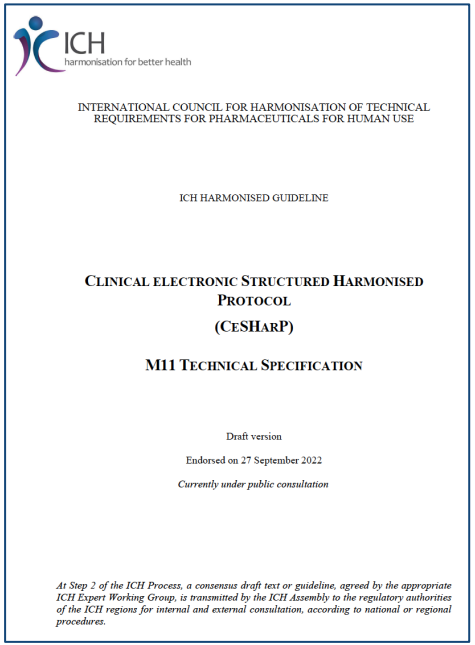
Draft version

Endorsed on 27 September 2022

Currently under public consultation

At Step 2 of the ICH Process, a consensus draft text or guideline, agreed by the appropriate ICH Expert Working Group, is transmitted by the ICH Assembly to the regulatory authorities of the ICH regions for internal and external consultation, according to national or regional procedures.

The specification of the Protocol Document Template that contains embedded data elements



ICH harmonisation for better health

INTERNATIONAL COUNCIL FOR HARMONISATION OF TECHNICAL REQUIREMENTS FOR PHARMACEUTICALS FOR HUMAN USE

ICH HARMONISED GUIDELINE

CLINICAL ELECTRONIC STRUCTURED HARMONISED PROTOCOL

(CESHARP)

M11 TECHNICAL SPECIFICATION

Draft version

Endorsed on 27 September 2022

Currently under public consultation

At Step 2 of the ICH Process, a consensus draft text or guideline, agreed by the appropriate ICH Expert Working Group, is transmitted by the ICH Assembly to the regulatory authorities of the ICH regions for internal and external consultation, according to national or regional procedures.

Provides a set of data element definitions aligned with the template specification

M11 Simple Example

Template Specification

Protocol Full Title:	[Protocol Full Title] The protocol should have a descriptive title that identifies the scientific aspects of the trial sufficiently to ensure it is immediately evident what the trial is investigating and on whom, and to allow retrieval from literature or internet searches.
Sponsor Confidentiality Statement:	[Sponsor Confidentiality Statement] Insert the Sponsor's confidentiality statement, if applicable, otherwise delete.
Protocol Number:	[Protocol Number] A unique alphanumeric identifier for the trial, designated by the Sponsor, is a standard part of trial data, and should be included for most trials.
Version:	[Version] An optional field for use by the Sponsor at their discretion.
Amendment Number:	[Amendment Number] Enter the amendment number. If this is the original instance of
Compound Number(s):	[Compound Number] Enter the Sponsor's unique identifier for investigational compound(s) in the trial. Add or delete additional fields as needed.
Compound Name(s):	[Nonproprietary Name]. [Proprietary Name]. [Additional Proprietary Name] Delete this line from the table if a nonproprietary name has not yet been assigned. Omit proprietary name fields if not yet established.
Trial Phase:	[Trial Phase] [Description of Trial Phase Other] Acceptable entries are: "Early Phase 1", "Phase 1", "Phase 1/Phase 2", "Phase 2", "Phase 2/Phase 3", "Phase 3", "Phase 4",

Trial Phase:	[Trial Phase] [Description of Trial Phase Other] Acceptable entries are: "Early Phase 1", "Phase 1", "Phase 1/Phase 2", "Phase 2", "Phase 2/Phase 3", "Phase 3", "Phase 4",

Technical Specification

Term (Variable)	Trial Phase
Data Type	Pick list
Topic, Value or Header	D
Definition	
User Guidance	For trials combining investigational drugs or vaccines with devices, classify according to the phase of drug development.
Conformance	Required
Cardinality	
Relationship content from ToC representing the protocol hierarchy	Title Page
Relationship (reference to high level conceptual model)	
Value	Early Phase 1 Phase 1 Phase 1/Phase 2 Phase 2 Phase 2/Phase 3 Phase 3 Phase 4 Other
Business rules	**Value Allowed:** yes **Relationship:** n/a **Concept:** Protocol short title
Duplicate field in other sections	

Controlled Terms

Template Specification

Protocol Full Title:	[Protocol Full Title] The protocol should have a descriptive title that identifies the scientific aspects of the trial sufficiently to ensure it is immediately evident what the trial is investigating and on whom, and to allow retrieval from literature or internet searches.
Sponsor Confidentiality Statement:	[Sponsor Confidentiality Statement] Insert the Sponsor's confidentiality statement, if applicable, otherwise delete.
Protocol Number:	[Protocol Number] A unique alphanumeric identifier for the trial, designated by the Sponsor, is a standard part of trial data, and should be included for most trials.
Version:	[Version] An optional field for use by the Sponsor at their discretion.
Amendment Number:	[Amendment Number] Enter the amendment number. If this is the original instance of
Trial Phase:	[Trial Phase] [Description of Trial Phase Other] Acceptable entries are: "Early Phase 1", "Phase 1", "Phase 1/Phase 2", "Phase 2", "Phase 2/Phase 3", "Phase 3", "Phase 4",
Compound Number(s):	[Compound Number] Enter the Sponsor's unique identifier for investigational compound(s) in the trial. Add or delete additional fields as needed.
Compound Name(s):	[Nonproprietary Name]. [Proprietary Name]. [Additional Proprietary Name] Delete this line from the table if a nonproprietary name has not yet been assigned. Omit proprietary name fields if not yet established.
Trial Phase:	[Trial Phase] [Description of Trial Phase Other] Acceptable entries are: "Early Phase 1", "Phase 1", "Phase 1/Phase 2", "Phase 2", "Phase 2/Phase 3", "Phase 3", "Phase 4",

Technical Specification

Term (Variable)	Trial Phase
Data Type	Pick list
Topic, Value or Header	D
Definition	
User Guidance	For trials combining investigational drugs or vaccines with devices, classify according to the phase of drug development.
Conformance	Required
Cardinality	
Relationship content from ToC representing the protocol hierarchy	Title Page
Relationship (reference to high level conceptual model)	
Value	Early Phase 1 Phase 1 Phase 1/Phase 2 Phase 2 Phase 2/Phase 3 Phase 3 Phase 4 Other
Business rules	**Value Allowed:** yes **Relationship:** n/a **Concept:** Protocol short title
Duplicate field in other sections	

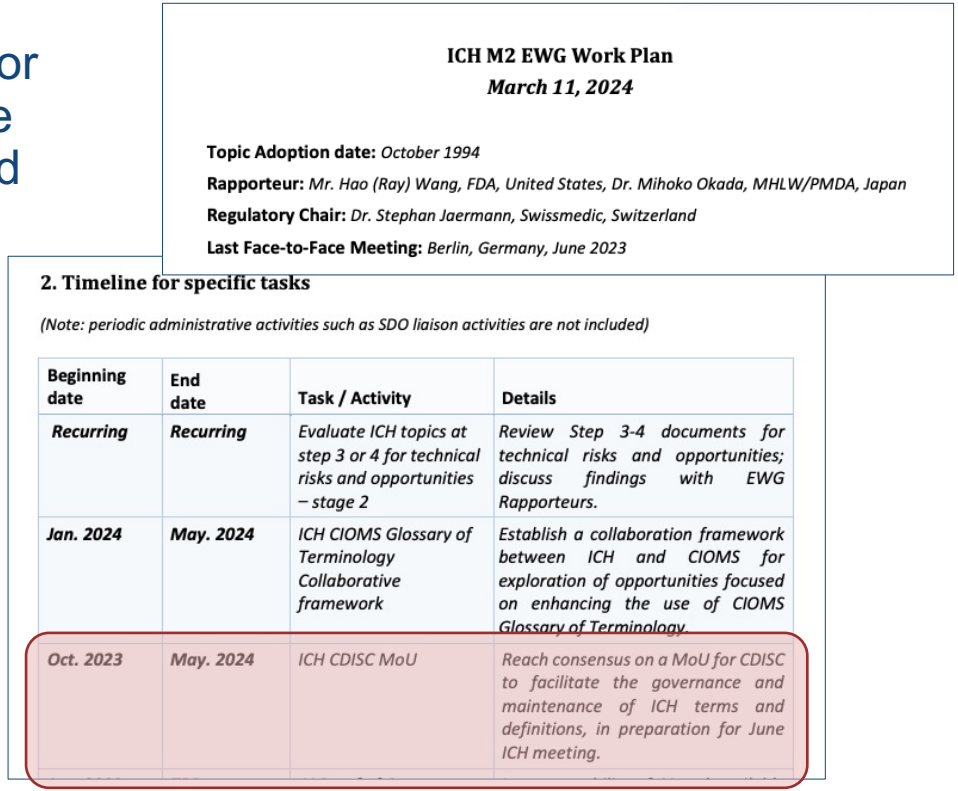
CDISC CT

Trial Phase Response (C66737)

NOT APPLICABLE
PHASE 0 TRIAL
PHASE I TRIAL
PHASE I/II TRIAL
PHASE II TRIAL
PHASE II/III TRIAL
PHASE IIA TRIAL
PHASE IIB TRIAL
PHASE III TRIAL
PHASE IIIA TRIAL
PHASE IIIB TRIAL
PHASE IV TRIAL
PHASE V TRIAL

ICH M11 and Controlled Terminology

- "Memorandum of Understanding for CDISC to facilitate the governance and maintenance of ICH terms and definitions"
- This will ensure that USDM and M11 CT is closely aligned



ICH M2 EWG Work Plan

March 11, 2024

Topic Adoption date: *October 1994*

Rapporteur: *Mr. Hao (Ray) Wang, FDA, United States, Dr. Mihoko Okada, MHLW/PMDA, Japan*

Regulatory Chair: *Dr. Stephan Jaermann, Swissmedic, Switzerland*

Last Face-to-Face Meeting: *Berlin, Germany, June 2023*

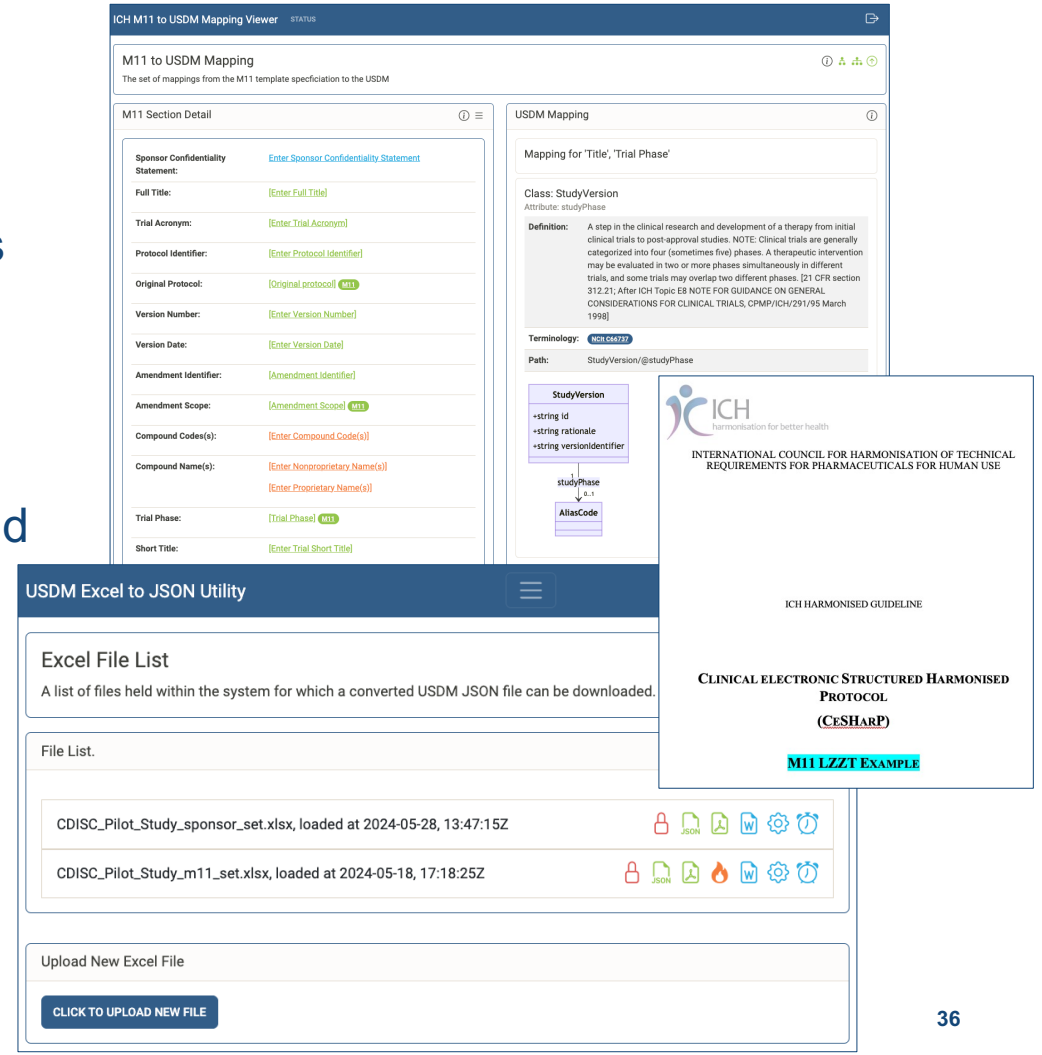
2. Timeline for specific tasks

(Note: periodic administrative activities such as SDO liaison activities are not included)

Beginning date	End date	Task / Activity	Details
Recurring	***Recurring***	*Evaluate ICH topics at step 3 or 4 for technical risks and opportunities – stage 2*	*Review Step 3-4 documents for technical risks and opportunities; discuss findings with EWG Rapporteurs.*
Jan. 2024	***May. 2024***	*ICH CIOMS Glossary of Terminology Collaborative framework*	*Establish a collaboration framework between ICH and CIOMS for exploration of opportunities focused on enhancing the use of CIOMS Glossary of Terminology.*
Oct. 2023	***May. 2024***	*ICH CDISC MoU*	*Reach consensus on a MoU for CDISC to facilitate the governance and maintenance of ICH terms and definitions, in preparation for June ICH meeting.*

USDM M11 Capability

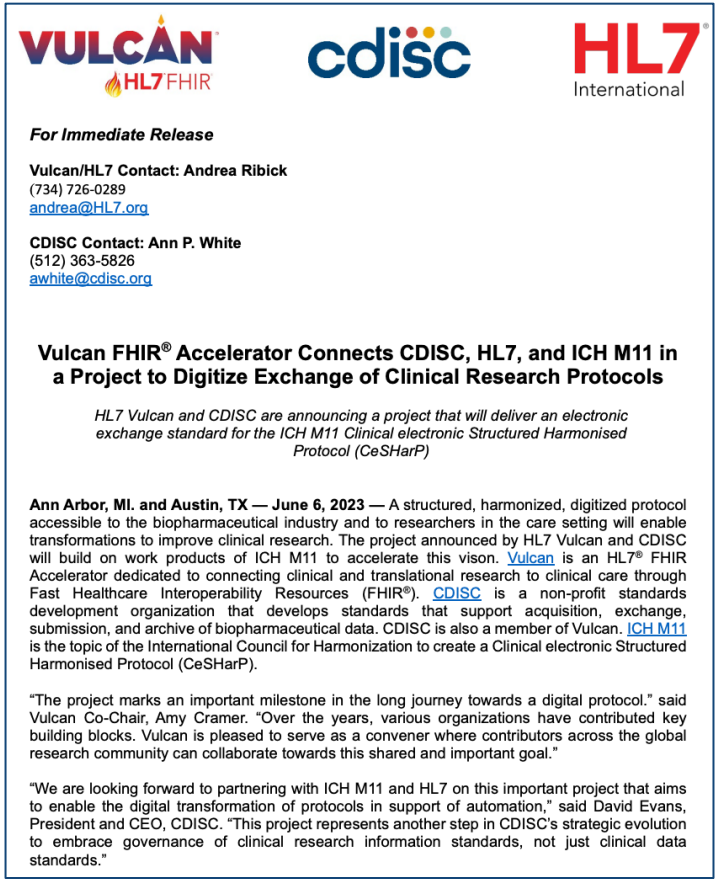
- USDM V3 can “store” protocols using
  - Sponsor templates
  - The M11 template
- Further work will be performed in Phase 4 to ensure USDM and M11 are aligned as M11 continues to evolve
- We now have LZZT in “M11 Template” format for test purposes



Utilizing the Digital Protocol (UDP)

ICH M11, CDISC & HL7

- “FHIR-based exchange standard for ICH’s Clinical electronic Structured Harmonised Protocol (CeSHarP), aligned to CDISC standards”
- Work is focused on an initial use case of transmission of a M11 protocol from Sponsor to a Regulator



For Immediate Release

Vulcan/HL7 Contact: Andrea Ribick
(734) 726-0289
andrea@HL7.org

CDISC Contact: Ann P. White
(512) 363-5826
awhite@cdisc.org

Vulcan FHIR® Accelerator Connects CDISC, HL7, and ICH M11 in a Project to Digitize Exchange of Clinical Research Protocols

HL7 Vulcan and CDISC are announcing a project that will deliver an electronic exchange standard for the ICH M11 Clinical electronic Structured Harmonised Protocol (CeSHarP)

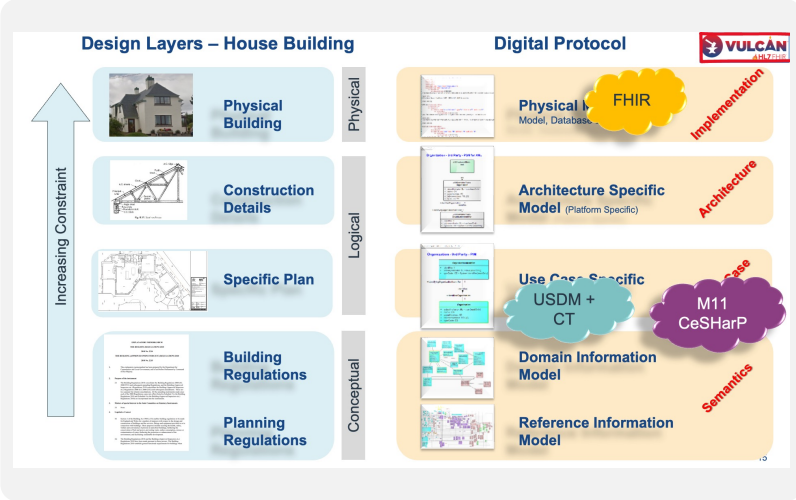
Ann Arbor, MI. and Austin, TX — June 6, 2023 — A structured, harmonized, digitized protocol accessible to the biopharmaceutical industry and to researchers in the care setting will enable transformations to improve clinical research. The project announced by HL7 Vulcan and CDISC will build on work products of ICH M11 to accelerate this vison. Vulcan is an HL7® FHIR Accelerator dedicated to connecting clinical and translational research to clinical care through Fast Healthcare Interoperability Resources (FHIR®). CDISC is a non-profit standards development organization that develops standards that support acquisition, exchange, submission, and archive of biopharmaceutical data. CDISC is also a member of Vulcan. ICH M11 is the topic of the International Council for Harmonization to create a Clinical electronic Structured Harmonised Protocol (CeSHarP).

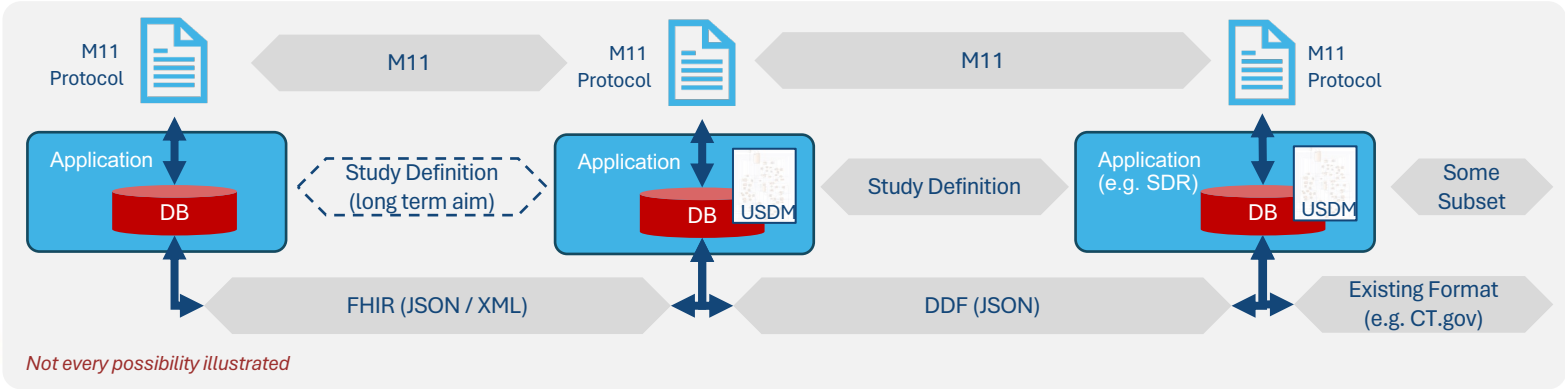
“The project marks an important milestone in the long journey towards a digital protocol.” said Vulcan Co-Chair, Amy Cramer. “Over the years, various organizations have contributed key building blocks. Vulcan is pleased to serve as a convener where contributors across the global research community can collaborate towards this shared and important goal.”

“We are looking forward to partnering with ICH M11 and HL7 on this important project that aims to enable the digital transformation of protocols in support of automation,” said David Evans, President and CEO, CDISC. “This project represents another step in CDISC’s strategic evolution to embrace governance of clinical research information standards, not just clinical data standards.”

USDM and M11 FHIR

- USDM will be consistent and aligned with the M11 Template and the M11 FHIR message
- Note that, currently, the USDM has a wider scope than the M11 template
- Key aim is to ensure consistency across use cases

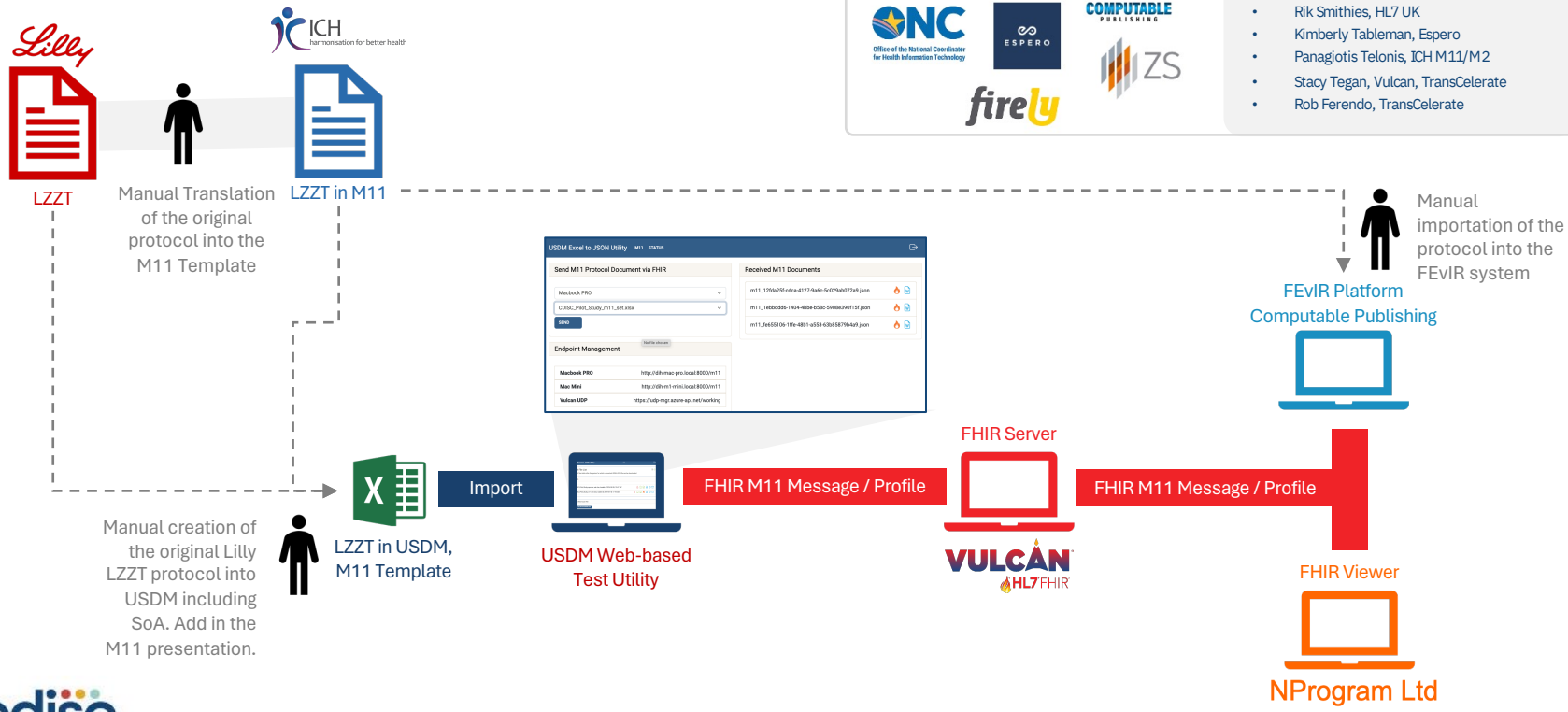




HL7 FHIR Connectathon

Dallas, May 2024

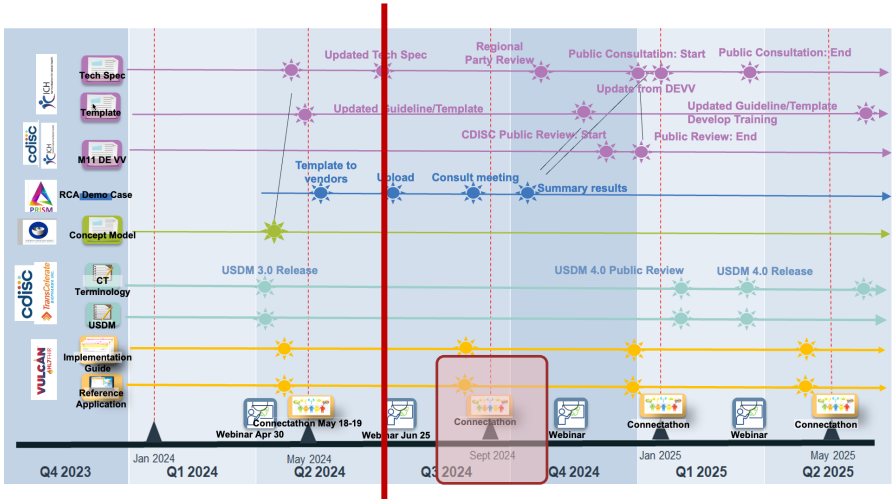
- Brian Alper, Computable Publishing
- Matt Elrod, ONC
- Hugh Glover, Vulcan ***TRACK LEAD***
- Dave Iberson-Hurst, CDISC
- Dan Newingham, ZS Associates
- Jmita Parekh, ICH M11/M2
- Khalid Shahin, Computable Publishing
- Rik Smithies, HL7 UK
- Kimberly Tableman, Espero
- Panagiotis Telonis, ICH M11/M2
- Stacy Tegan, Vulcan, TransCelerate
- Rob Ferendo, TransCelerate



Next Steps

- Now developing the message/profile based on the experience of the first connectathon
- This includes “structuring”
  - Title page
  - Objective and endpoints
  - Inclusion and exclusion criteria
- Next connectathon is in September in Atlanta

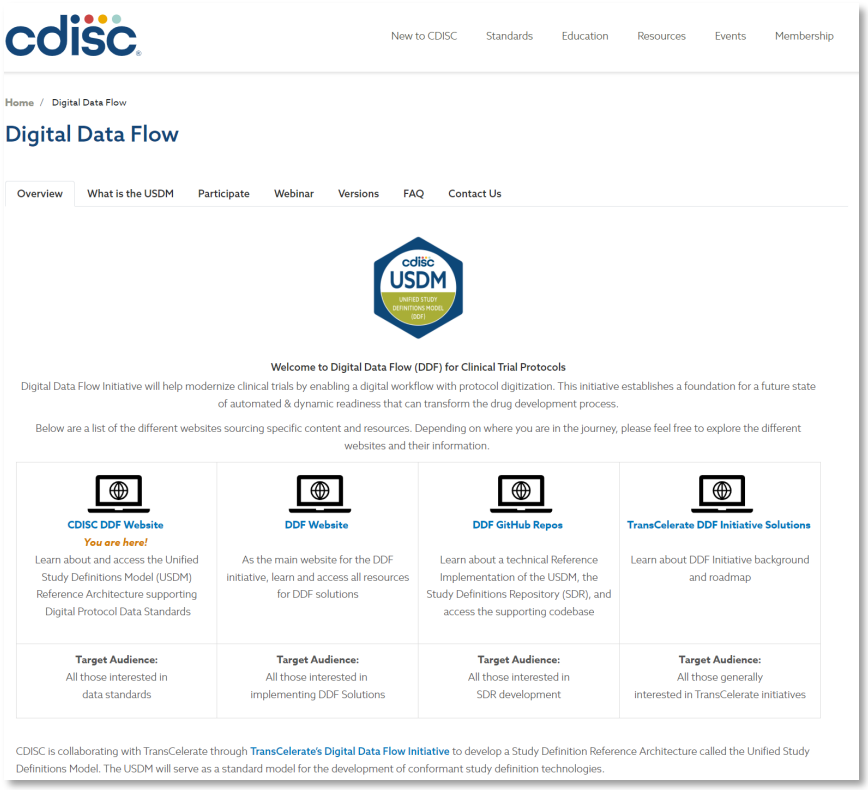
VULCAN HL7 FHIR



Available Resources

PUBLIC

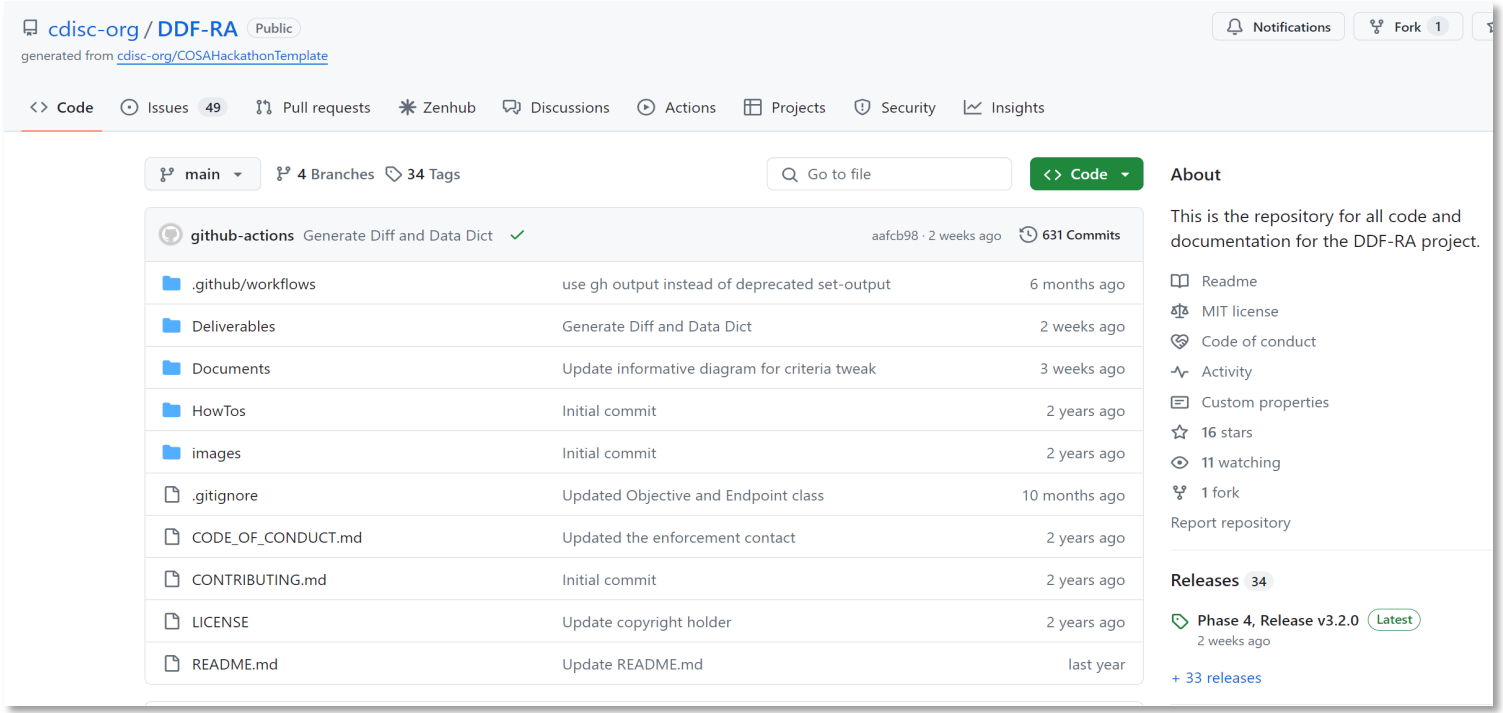
CDISC DDF Web Site Page



https://www.cdisc.org/ddf

PUBLIC

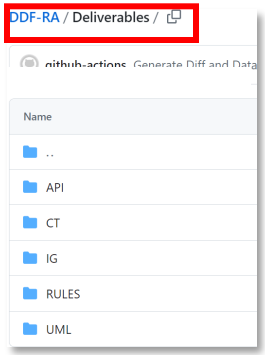
GitHub

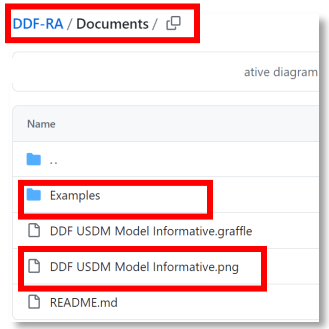


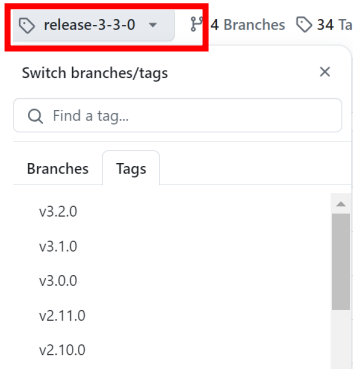
https://github.com/cdisc-org/DDF-RA

PUBLIC

GitHub

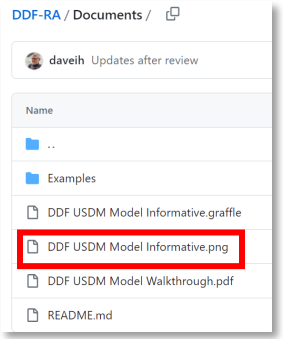


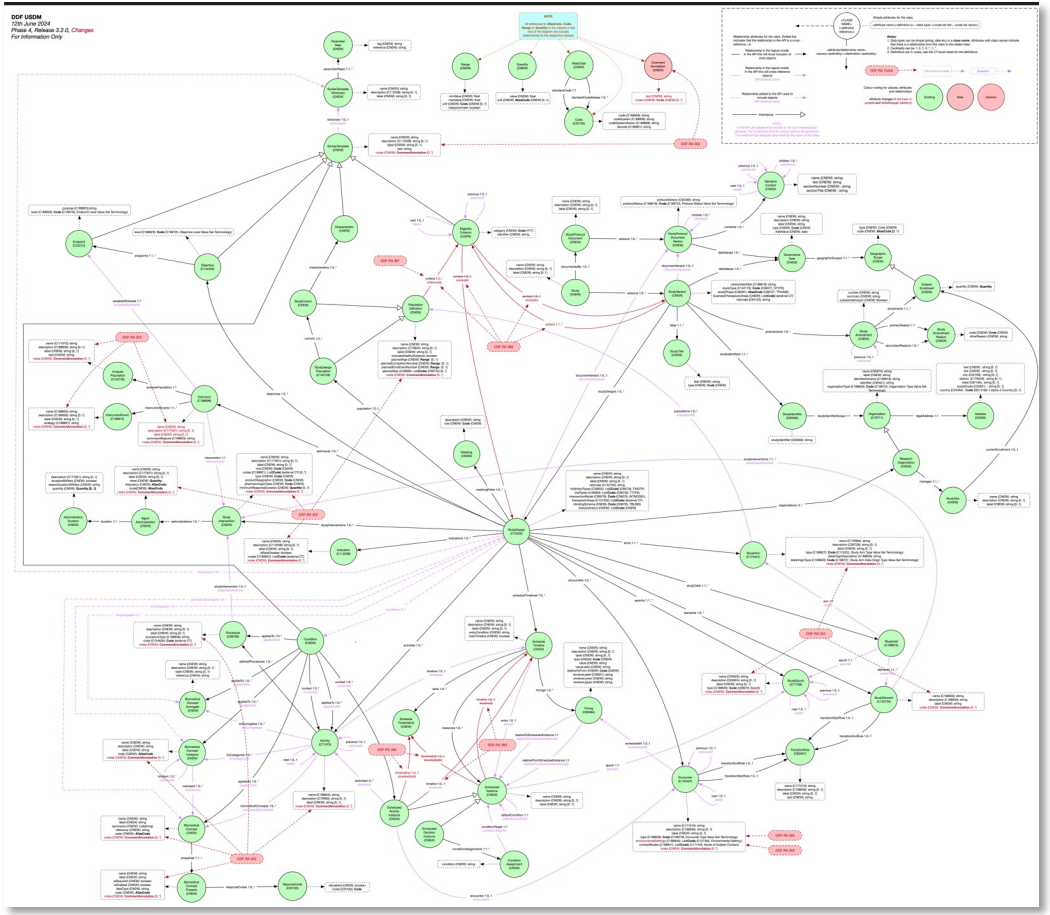




https://github.com/cdisc-org/DDF-RA

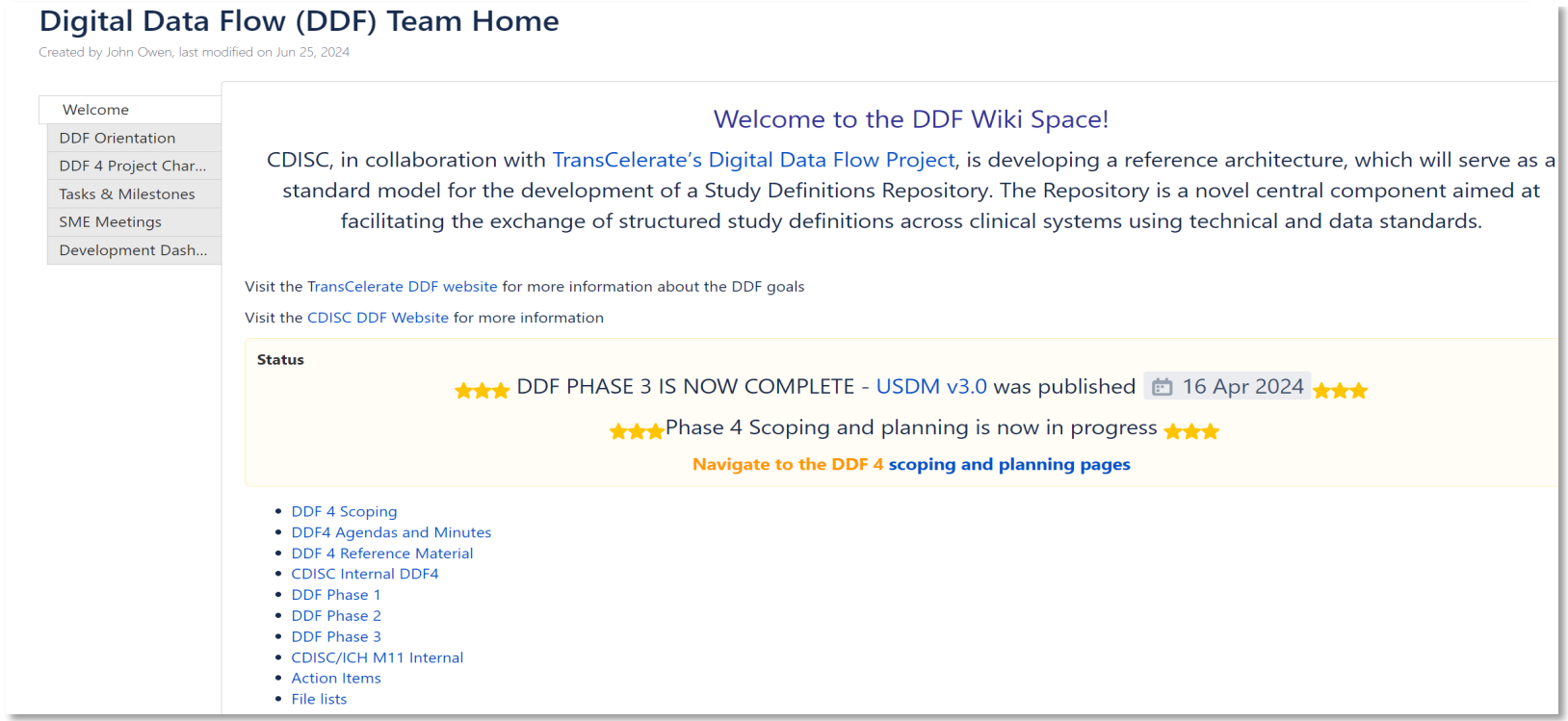
DDF USDM Model Information Graphic





CDISC WIKI ACCOUNT REQUIRED

WIKI Team Space



Digital Data Flow (DDF) Team Home

Created by John Owen, last modified on Jun 25, 2024

- Welcome
- DDF Orientation
- DDF 4 Project Char...
- Tasks & Milestones
- SME Meetings
- Development Dash...

Welcome to the DDF Wiki Space!

CDISC, in collaboration with TransCelerate's Digital Data Flow Project, is developing a reference architecture, which will serve as a standard model for the development of a Study Definitions Repository. The Repository is a novel central component aimed at facilitating the exchange of structured study definitions across clinical systems using technical and data standards.

Visit the TransCelerate DDF website for more information about the DDF goals

Visit the CDISC DDF Website for more information

Status

★★★ DDF PHASE 3 IS NOW COMPLETE - USDM v3.0 was published 16 Apr 2024 ★★★

★★★Phase 4 Scoping and planning is now in progress ★★★

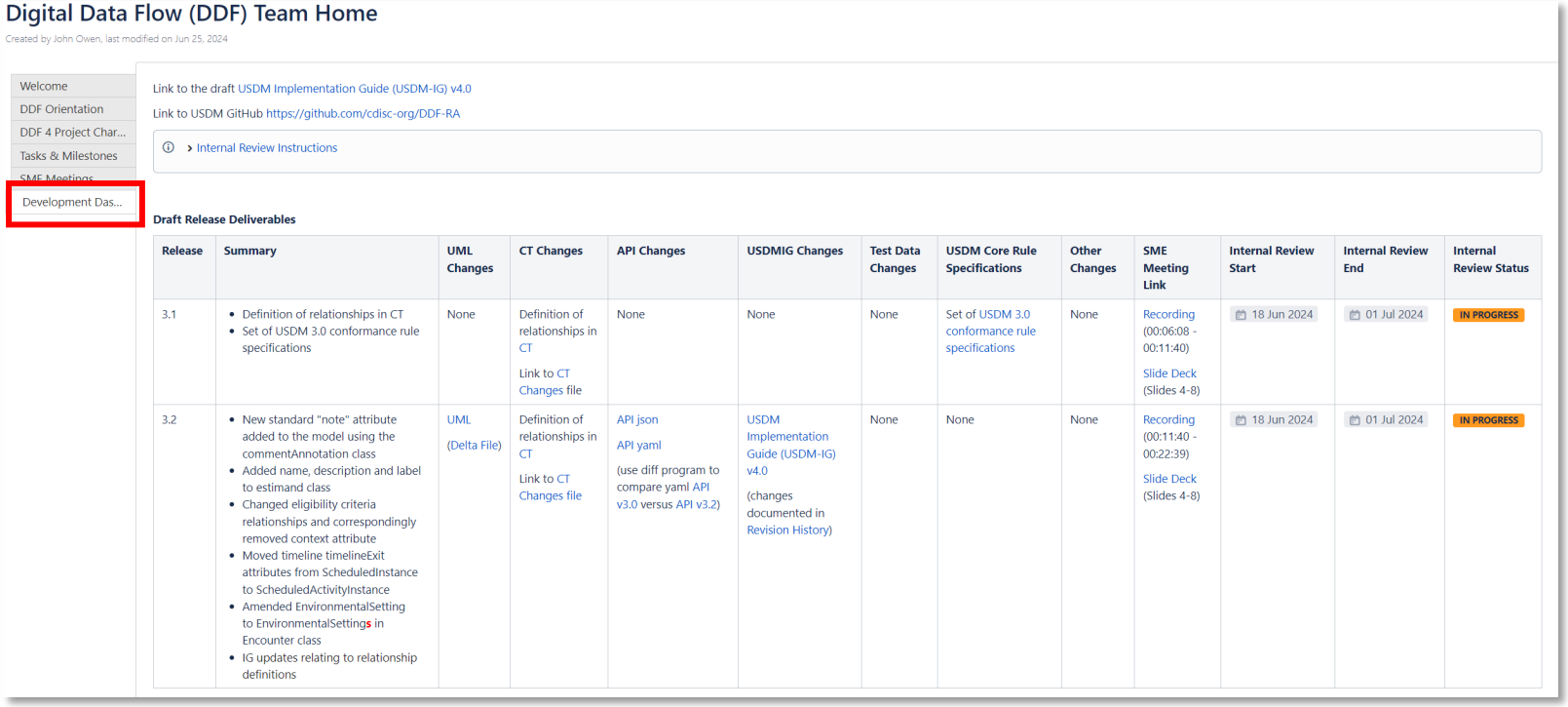
Navigate to the DDF 4 scoping and planning pages

- DDF 4 Scoping
- DDF4 Agendas and Minutes
- DDF 4 Reference Material
- CDISC Internal DDF4
- DDF Phase 1
- DDF Phase 2
- DDF Phase 3
- CDISC/ICH M11 Internal
- Action Items
- File lists

https://wiki.cdisc.org/display/TEAMDDF/Digital+Data+Flow+%28DDF%29+Team+Home

CDISC WIKI ACCOUNT REQUIRED

WIKI Team Space – Development Dashboard for SMEs



Digital Data Flow (DDF) Team Home

Created by John Owen, last modified on Jun 25, 2024

- Welcome
- DDF Orientation
- DDF 4 Project Char...
- Tasks & Milestones
- SME Meetings
- Development Das...

Link to the draft USDM Implementation Guide (USDM-IG) v4.0

Link to USDM GitHub https://github.com/cdisc-org/DDF-RA

› Internal Review Instructions

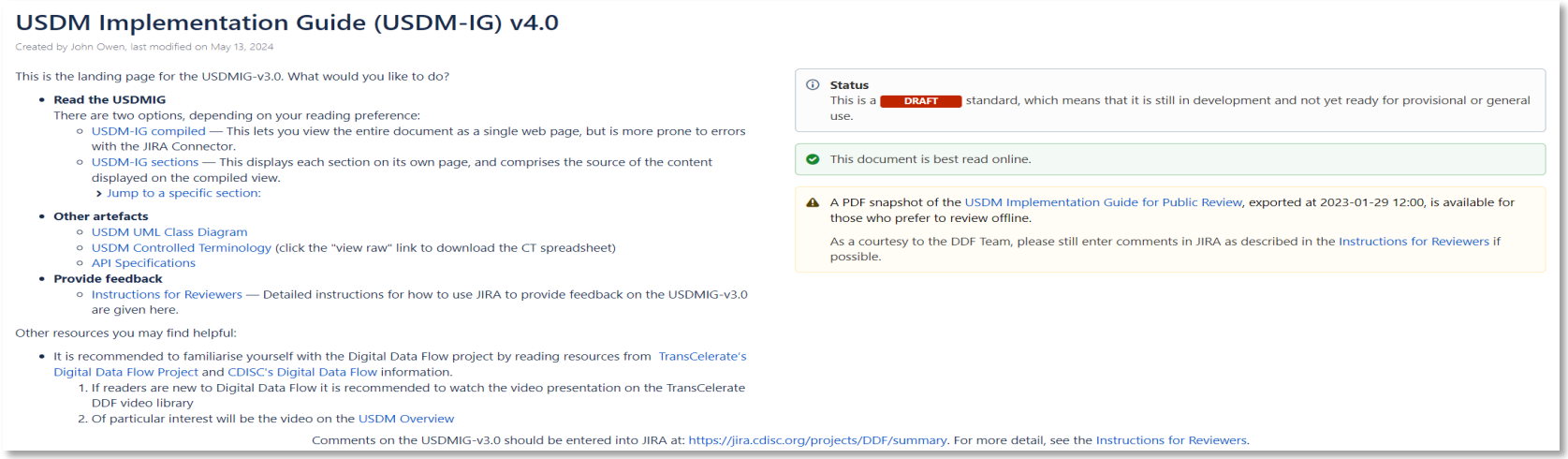
Draft Release Deliverables

Release	Summary	UML Changes	CT Changes	API Changes	USDMIG Changes	Test Data Changes	USDM Core Rule Specifications	Other Changes	SME Meeting Link	Internal Review Start	Internal Review End	Internal Review Status
3.1	• Definition of relationships in CT • Set of USDM 3.0 conformance rule specifications	None	Definition of relationships in CT Link to CT Changes file	None	None	None	Set of USDM 3.0 conformance rule specifications	None	Recording (00:06:08 - 00:11:40) Slide Deck (Slides 4-8)	18 Jun 2024	01 Jul 2024	IN PROGRESS
3.2	• New standard "note" attribute added to the model using the commentAnnotation class • Added name, description and label to estimand class • Changed eligibility criteria relationships and correspondingly removed context attribute • Moved timeline timelineExit attributes from ScheduledInstance to ScheduledActivityInstance • Amended EnvironmentalSetting to EnvironmentalSettings in Encounter class • IG updates relating to relationship definitions	UML (Delta File)	Definition of relationships in CT Link to CT Changes file	API json API yaml (use diff program to compare yaml API v3.0 versus API v3.2)	USDM Implementation Guide (USDM-IG) v4.0 (changes documented in Revision History)	None	None	None	Recording (00:11:40 - 00:22:39) Slide Deck (Slides 4-8)	18 Jun 2024	01 Jul 2024	IN PROGRESS

https://wiki.cdisc.org/display/TEAMDDF/Digital+Data+Flow+%28DDF%29+Team+Home

WIKI – USDMIG

CDISC WIKI ACCOUNT REQUIRED



USDM Implementation Guide (USDM-IG) v4.0

Created by John Owen, last modified on May 13, 2024

This is the landing page for the USDMIG-v3.0. What would you like to do?

- **Read the USDMIG**
  There are two options, depending on your reading preference:
  - USDM-IG compiled — This lets you view the entire document as a single web page, but is more prone to errors with the JIRA Connector.
  - USDM-IG sections — This displays each section on its own page, and comprises the source of the content displayed on the compiled view.
    › Jump to a specific section:
- **Other artefacts**
  - USDM UML Class Diagram
  - USDM Controlled Terminology (click the "view raw" link to download the CT spreadsheet)
  - API Specifications
- **Provide feedback**
  - Instructions for Reviewers — Detailed instructions for how to use JIRA to provide feedback on the USDMIG-v3.0 are given here.

Other resources you may find helpful:

- It is recommended to familiarise yourself with the Digital Data Flow project by reading resources from TransCelerate's Digital Data Flow Project and CDISC's Digital Data Flow information.
  1. If readers are new to Digital Data Flow it is recommended to watch the video presentation on the TransCelerate DDF video library
  2. Of particular interest will be the video on the USDM Overview

Status
This is a DRAFT standard, which means that it is still in development and not yet ready for provisional or general use.

This document is best read online.

A PDF snapshot of the USDM Implementation Guide for Public Review, exported at 2023-01-29 12:00, is available for those who prefer to review offline.

As a courtesy to the DDF Team, please still enter comments in JIRA as described in the Instructions for Reviewers if possible.

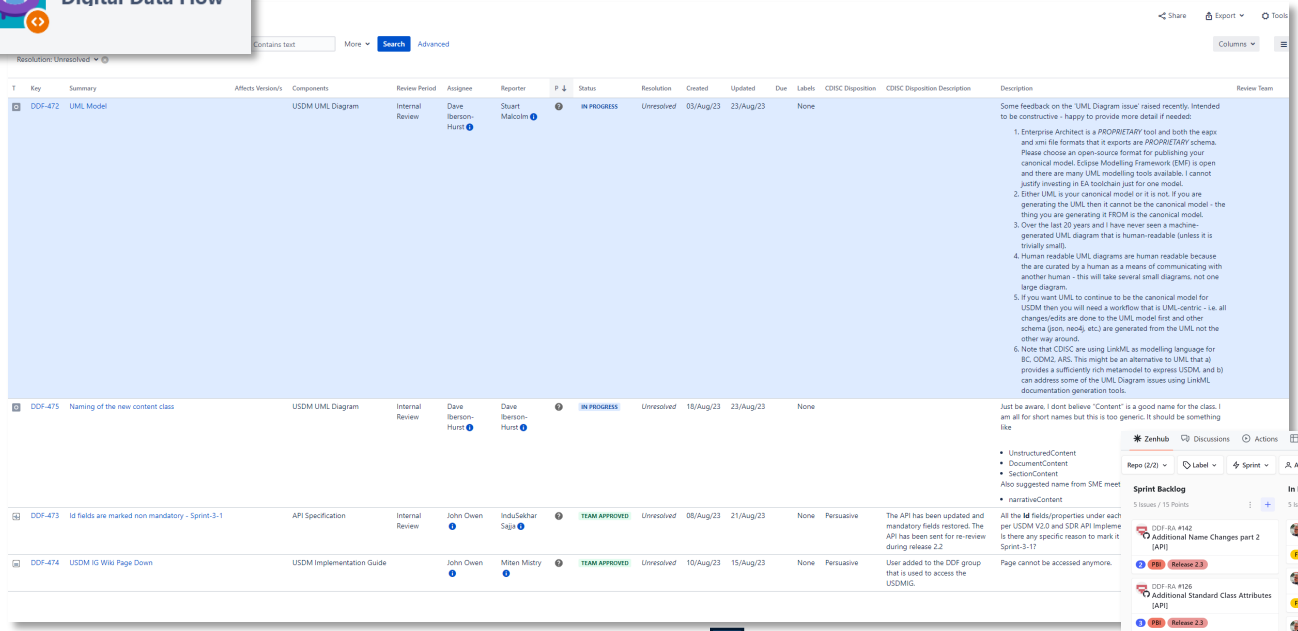
Comments on the USDMIG-v3.0 should be entered into JIRA at: https://jira.cdisc.org/projects/DDF/summary. For more detail, see the Instructions for Reviewers.

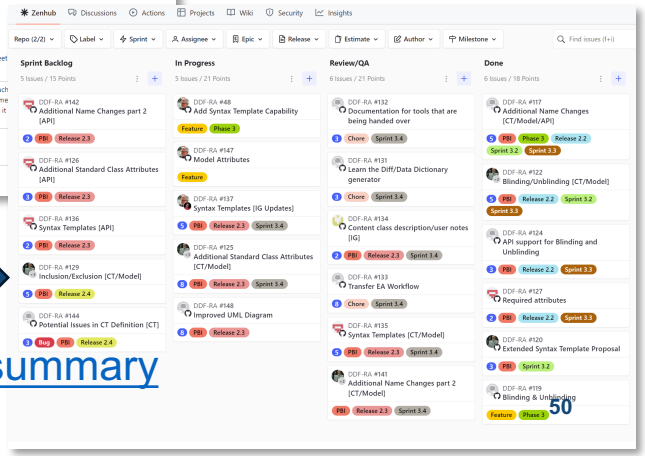
https://wiki.cdisc.org/display/USDMIGv4/USDM+Implementation+Guide+%28USDM-IG%29+v4.0

CDISC WIKI ACCOUNT REQUIRED

JIRA – Internal and Public Review Comment Tracking

Digital Data Flow





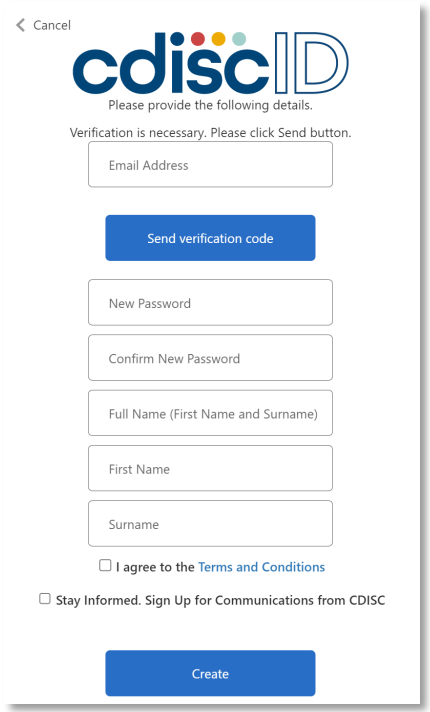
https://jira.cdisc.org/projects/DDF/summary

Onboarding as a volunteer to the CDISC DDF Team

How to get involved

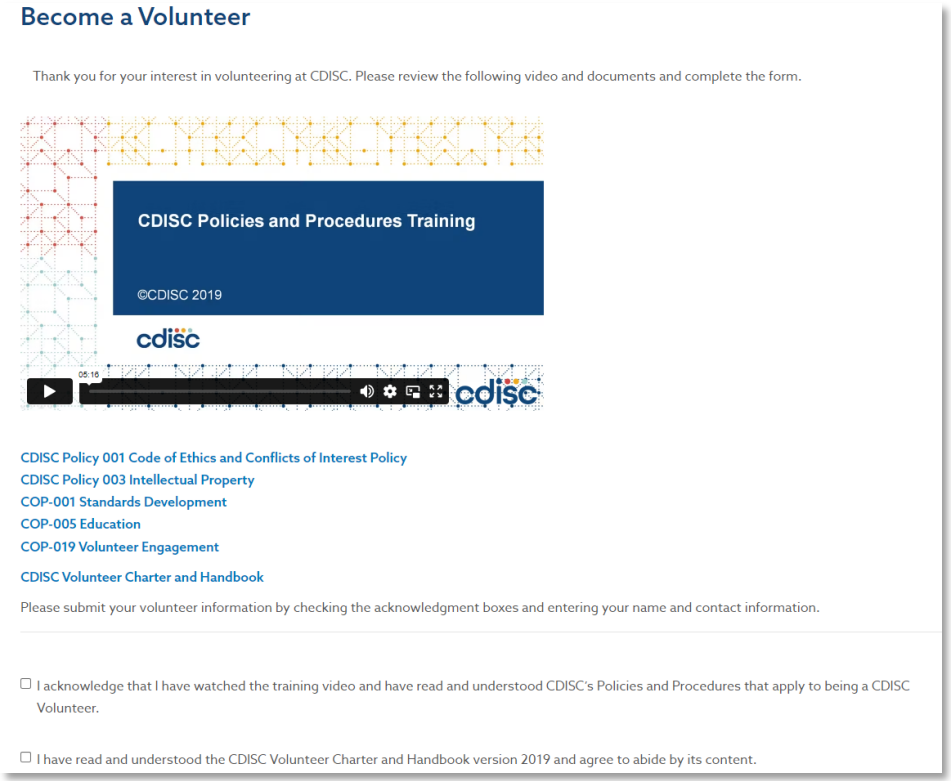
Process to Request a CDISC Wiki Account

- Create a free cdiscID (if you don't have one already)



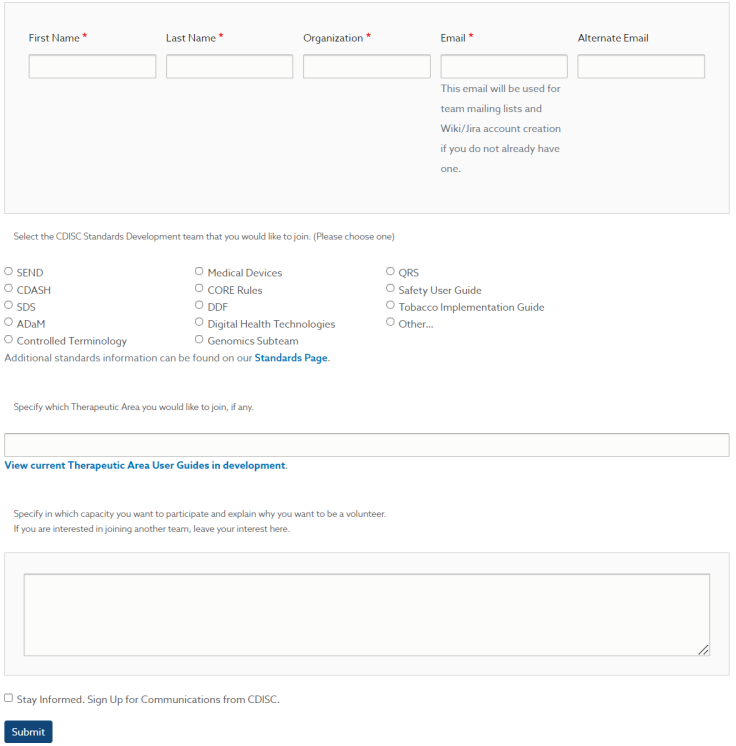
Process to Request a CDISC Wiki Account

- Navigate to the CDISC Volunteer form
  - https://www.cdisc.org/volunteer/form
  - Review of volunteer information



Process to Request a CDISC Wiki Account - DDF

- Navigate to the CDISC Volunteer form
  - Enter your contact information
  - Choose DDF from the team selection
  - Leave TA box blank
  - Enter brief text into the “Specify in which capacity….” box
  - Click Submit



Process to Request a CDISC Wiki Account - DDF

- The CDISC Volunteer coordinator will process your request
  - A CDISC WIKI and JIRA account will be created (if you don't have one already)
  - You will be added to the DDF mailing list
  - Your request will be forwarded to the DDF PM who will add you to the DDF WIKI group
  - You will then be able to access the DDF WIKI materials and submit comments in JIRA

Upcoming DDF Events

Upcoming DDF Events

2024 Events*	Date
Vulcan UDP Webinar Vulcan UDP (Utilizing the Digital Protocol): Collaborating to Accelerate ICH M11 and End User Value (transceleratebiopharmainc.com)	11 July 2024
DDF Vendor Showcase Webinar Series	26 September 2024
2024 CDISC US Interchange 2024 CDISC + TMF US Interchange | CDISC	21-25 October 2024
SCOPE Europe 2024 Digital Data Flow: Digitalising Clinical Protocol Information to Accelerate Clinical Research and Enable Healthcare Interoperability	29-30 October 2024
PHUSE EU Connect 2024 PHUSE EU Connect 2024 (phuse-events.org)	10-13 November 2024

SAVE THE DATE

"DDF in Action" Day

- **When: Oct. 10, 2024**
- **Where**: EU (Novo Nordisk, Copenhagen, Denmark); US (J&J, Raritan, New Jersey)
- **Registration opens Mid-July**

An in-person full day event, involving sponsor companies, clinical solution providers, and key industry stakeholders, offers an **interactive experience to exchange knowledge** about implementing the Unified Study Definition Model (USDM) and Study Definitions Repository (SDR) Digital Data Flow (DDF) solutions.

** Please note, related industry events are not formally endorsed by TransCelerate and are listed for awareness only*

DDF 4 CDISC US Interchange

https://www.cdisc.org/

Events Membership

Conferences
2024 China Interchange
2024 Korea Interchange
2024 US Interchange

Webinars
Upcoming Webinars
Public Webinars Archive

All Events
COSA
Partner Events

Digital Data Flow Workshop

October 22, 2024 8:45 AM-4:00 PM MST

Following on from the the first public, in-depth, workshop on the Unified Study Definitions Model (USDM) at the EU Interchange in Berlin, the DDF team is pleased to announce a sister workshop at the US Interchange. The workshop will take a deep dive into all aspects of the model and how study protocols and designs can be represented using the USDM.

The day will be organised as a series of focused sessions, with each session covering the theory on an individual aspect of the model combined with hands-on exercises and discussion.

Workshop agenda:

- Model Overview
- Structured and unstructured content, Study, Protocol and Titles
- Inclusion and Exclusion Criteria
- Objectives and Endpoints
- Population and Cohorts
- Schedule of Assessments, Timing and Planning
- Amendments
- Narrative content, Protocol document and ICH M11

Day 1
23 October 2024

14:00 - 15:30
Session 3A: Digital Protocol, Part I

Peter Van Reusel, CDISC

14:00 - 14:30
ICH M11, TransCelerate, CDISC & HL7: Driving the Adoption of Digital Protocol
Peter Van Reusel, CDISC

14:30 - 15:00
Digital Data Flow: Achieving Protocol Digitalization and Clinical Research Interoperability through Multi-stakeholder Collaboration
Bill Illis, TransCelerate Biopharma

15:00 - 15:30
USDM in Action – From Protocol to SDTM
Dave Iberson-Hurst, data4knowledge

16:00 - 17:30
Session 4A: Digital Protocol, Part II

Bron Kisler, Nurocor

16:00 - 16:30
DDF and Breaking Down the Document Barrier
Bob Brindle and Frederik Malfait, Nurocor

16:30 - 17:00
Trial CAD: Constrained Optimisation Approaches to Parametric Clinical Study Design
Daniel Roythorne, AstraZeneca

17:00 - 17:30
Digital Protocol Panel Discussion

https://www.cdisc.org/events/interchange/2024-cdisc-tmf-us-interchange

Questions