Summary of Unified Data Reference Architecture (UDRA) v1.1 Updates applied since v1.0 was signed on 22 March 2024.

General: For consistency, applied minor quality assurance edits throughout. E.g., alphabetized tables; removed blank lines, adding or removing extra spaces or hyphens; updates to fonts and colors for consistency; minor updates to wording for clarity. Rationale: For consistency.

Section 1.2:   For clarity and consistency, updated "This UDRA provides guidance for systems level implementation of data mesh principles to enable..." to "This UDRA provides a reference architecture based on data mesh principles to enable..."   Rationale: The UDRA does not provide guidance for systems level implementations.

Section 1.3:   For consistency, added Computational Governance to the key terms. Rationale: The prominence of Computational Governance in the UDRA justifies acknowledgement it is a key term.

Section 1.3:   For completeness, updated the data product definition a) to not be limited to a "set of data"; b) added "logically" to the data product definition; and c) removed the word "persistent". Rationale: a) A data product may be a single data element, a real-time stream of data, or more, and the bounds should not be limited by the definition; b) To clarify the data product metadata and description fields do not literally need to be pre-packaged with the payload; and c) This update allows for dynamic content.

Section 2.1:   For consistency, removed "Governed" from the legend of Figure 2. Rationale: For consistency with the contents.

Section 3.2:   For clarity, added "Data domains are encouraged to use these fields as needed for supporting the data product needs." to prefix the description fields. Rationale: For clarity of intent.

Section 3.2:   For consistency, updated metadata data element names and definitions to align with *DoD Metadata Guidance*. (e.g., *creator* changed to *originator*, *publisher* changed to *custodian*, *classification* changed to *securityClassification*, and *createDate* changed to *creationDateTime*.) Rationale: For consistency with the *DoD Metadata Guidance*; furthermore, creation *time* is especially important to acknowledge for tactical data products, and it is important to distinguish security classification as specific to security rather than other types of classification (e.g., condition classification or hazardous materials classification, which are both appropriate for munitions).

Section 3.2:   For consistency, removed the *caveats* and *declassification* description fields. Rationale: these fields are both undefined in UDRA 1.0; these fields both can be handled in the *handlingRestrictions* and *disclosureAndReleasability* required metadata which is consistent with *DoD Metadata Guidance*.

Section 3.2:   For consistency, removed the *locationTag* description field. Rationale: It is functionally redundant with *geospatialCoverage* (mapped to the MIM Location class) which was added to UDRA v1.0 at the last minute. Also updated the *geospatialCoverage* definition for consistency.

Section 3.2:   For consistency, added the *metadataBinding* description field. Rationale: the UDRA Model was updated to include the *metadataBinding* description field.

Section 3.2:   For consistency, removed the *hashAlgorithm* description field which is now an attribute of the checksum description field. (See Appendix B.2 for details.) Rationale: For consistency with updates to the UDRA Model, which was updated to consolidate the *hashAlgorithm* and *hashValue* data elements.

Section 3.2:   For consistency, updated Figure 4 to depict updated required metadata field names (aligned w/ *DoD Metadata Guidance*) and description field updates (e.g., added *metadataBindings*, removed *locationTag*). Rationale: For consistency with DoD Metadata Guidance and updates to the UDRA Model.

Section 3.2:   For consistency, updated the description of the *documentation* description field to specify a URI. Rationale: the UDRA Model was updated to provide a URI for documentation.

Section 3.2:   For clarity, updated the *temporalCoverage* description field definition to specify UTC. Rationale: For clarity, citing a single temporal reference system enables consistent temporal queries.

Section 3.2:   For clarity, updated the title of Figure 4 to "UDRA Data Product Metadata, Description Fields and Payload". Rationale: the previous title could be read ambiguously whether the description fields were required.

Section 3.2:   For consistency, updated the metadata binding approaches. Rationale: the definitions were refined during reviews of the UDRA Implementation Guidance developed after UDRA v1.0 was approved.

Section 4.1:   For consistency, changed the numbered list to a bulleted list. Rationale: For consistency with other lists.

Sections 5.1.1, 5.2, and Appendix D: For clarity, removed the "DP" acronym (for Data Product) from the service activity titles. Rationale: For clarity and readability.

Section 5.1.6: For clarity, updated a reference to "... Innovation Exchange platforms" to "... Innovation Exchange Lab (IXL)". Rationale: The original intent was to cite IXL in v1.0.

Section 5.2 and Appendix D: For consistency, re-ordered the service activities to be in a natural order of occurrence, aligning with the Use Cases; similarly, updated the service activity numbers in the Use Cases where applicable. (e.g., *1.3 Recall Data Product* is now *1.7 Recall Data Product*) Rationale: For consistency.

Appendix A: For completeness and consistency, added acronyms for DAMA, DISR, DMBOK, IRM, ISM, IXL, UTC, and VAULTIS. Rationale: For completeness and consistency.

Appendix A: For consistency, removed unused acronyms for CRISP-DM and USAREUR. Rationale: For consistency.

Appendix B.1:   For consistency, removed "Service Code" from the *Custodian* and *Originator* examples. Rationale: For consistency with the UDRA Model; "Service Code" was removed from the UDRA Model for simplicity.

Appendix B.1:   For consistency, expanded the example for the *authorizationReference* description field into two sub-elements, one for "Document Title" and the second for "Document Date". Rationale: For consistency with the Authorization Reference example provided in *DoD Metadata Guidance*.

Appendix B.1:   For consistency, added "Retention Date" to the *securityClassification* metadata example. Rationale: for consistency with the Security Classification example provided in *DoD Metadata Guidance*.

Appendix B.2:   For consistency, updated description field examples (e.g., *geospatialCoverage*) for consistency with the updated definitions above in Section 3.2.

Appendix B.2:   For clarity, added text "The reference may point to 0 or more feedback submissions..." to the *feedback* description field example to clarify the cardinality of the description field. Rationale: For clarity of cardinality in the UDRA Model.

Appendix B.2:   For clarity, added text "The reference may point to 0 or more usage summary submissions..." to the *usageSummary* description field example to clarify the cardinality of the description field. Rationale: For clarity of cardinality in the UDRA Model.

Appendix B.2:   For consistency, updated "standardName" to "standardIdentifier" in the *conformsToStandard* description field example. Rationale: The UDRA Model was updated to align with DISR standard identifiers.

Appendix B.2:   For consistency, updated "Unit of Measure" to "Unit" in the *domainDescriptionElement* description field. Rationale: The UDRA Model was updated to be more descriptive.

Appendix D.2:   For consistency, changed service activity 3.5 from "Manage Data" to "Aggregate Data". Rationale: For consistency with Section 5.2.

Appendix D.3:   For completeness, added a pre-condition to *UC03 - Register Data Product*, for the availability of a catalog with access rights for a producer to be able to register a data product. Rationale: For completeness.

Appendix G: For consistency, removed the CRISP-DM reference which was not cited in UDRA v1.0 due to last-minute content changes pre-signature. Rationale: For consistency.

Appendix G: For currency, updated the reference to the CIO's *Army Data Governance Roles and Responsibilities* memorandum to the current version, dated 2 April 2024. Rationale: for currency.