**Volume Revision Summary**

This document contains a high-level summary of volume edits performed since the volumes were released for the June 1-2, 2017 workshop. The intent of this summary is to guide contributors to new material since the workshop. Additional content may have been added to the volumes since version 1 (released September 2015) that is not contained in this summary. During the public comment period, participants are encouraged to read the entire volume(s) to gain a complete understanding of the discussion surrounding each Big Data topic. Please direct any questions to Wo Chang (wchang@nist.gov).

**Volume 1:**

* Small revisions in the Executive Summary
* Small revisions in Section 1, including text for Section 1.5
* Section 2:
  + Renamed “Big Data Characteristics” from “Big Data”
  + Addition of Section 2.2.5, Structured and Unstructured Data Types
  + Various edits throughout Section 2
* Section 3, Big Data Engineering (Frameworks)
  + Various edits throughout Section 3
  + Added Sections 3.1.1, Shared-Disk File Systems; 3.1.2, Distributed File Systems; and 3.1.3, Distributed Data Processing. The text for these sections was previously in a bullet list.
  + Added Sections 3.1.4, Resource Negotiation and 3.1.5, Data Movement. The text for these sections was previously in one section (3.1)
  + Added Sections 3.1.6, Concurrency (new text in this section); 3.1.7, Tiers of Storage (revised text); 3.1.8, Cluster Management (new text)
  + Section 3.2 title changed from “Scalable Logical Data Storage” to “Scalable Logical Data Platforms”
  + Added Sections 3.2.1, Relational Platforms (with new text); 3.2.2, Non-relational Platforms (NoSQL) (with modified existing text); 3.2.3, Non-relational Platforms (NewSQL) (with new and existing text)
  + Section 3.3.1, High Performance Computing: new text was added and revisions to existing text were performed
  + Section 3.3.2, Cloud Computing: text was greatly enhanced
  + Cyber-physical systems was combined with Internet of Things section and text was augmented
  + Section 3.3.4, Blockchain: new text was added in this section
  + Section 3.3.5, Programming Languages: this is a new section and new text was added
* Section 4:
  + Title changed from “Data Science Applications” to Data Science”,
  + Sections were rearranged
  + Considerable additional text was added throughout the section
  + Section 4.1, title changed from “When is it Data Science?” to “Origins of Data Science”
  + Section 4.5, Emergent Behavior: four new subsections were added for the following topics: Network Effect-Deep Learning; Mosaic Effect; Data Ownership; and Societal Implications.
* Section 6:
  + Title was changed from “Big Data Management” to “Orchestration”,
  + New text was added

**Volume 2:**

* No new text since the workshop

**Volume 3:**

* Revised the Executive Summary
* Revised Section 1
* Revised text in the new Section 4
* Added Appendix E, which contains the revised Use Case Template 2
* Added Appendix F, which contains the two version 2 use cases submitted to date

**Volume 6**

* Revised Section 1, including new text for Section 1.5, Future Work on this Volume
* Section 3
  + Added two figures to show multiple instances of NBDRA components as part of a larger systems and a system of systems view
* Section 4, NBDRA Architecture Views
  + Significant text changes
  + Section 4.1: Revised activities figure and text for figure
  + Section 4.1.3, 4.1.3.1, 4.1.3.2, and 4.1.3.3: New text added
  + Section 4.1.4: text edited
  + Section 4.1.4.1, text moved to this section from the end of Section 4
  + Section 4.1.5: New text added
  + Sections 4.2.1, 4.2.2, 4.2.3: New text added
  + Section 4.2.3.1.1: New section with text from previous section
  + Section 4.2.3.1.2: section name changed from “Networking” to “Physical and Virtual Networks”
  + Section 4.2.3.1.3: Title changed from “Computing” to “Physical and Virtual Computing”
  + Section 4.2.3.1.5: Title changed from “Environmental Resources” to Physical Plant”
  + Section 4.2.3.4: New section with new text
  + Section 4.2.4, Management Fabric: New subsection titles, new text in Sections 4.2.4.2 through 4.2.4.4
  + Section 4.2.5, Security and Privacy Fabric: New sections and all new text
* Section 5, Conclusion: New text
* Revised NBDRA figure