So let's get into the meet of this…
When published, the basic structure of the NBIMS-US looks like this:

First you have the Introductory materials including Summaries, Wayfinding tools and Guidelines for implementation,

Next you have the four major parts of the actual standards content, including

Reference Standards
Terms & Definitions
Information Exchanges
And
Practice Documents

Let's take a closer look at the content of these four major sections.... As we do, you'll notice some sections are emphasized with colored text, to indicate content which was added or revised for version 3...
First, we have the Reference Standards. Think of these as the technical foundations, or building blocks that are utilized by other parts of the standards which specify means of data exchange and implementation methodologies. They are a collection of OPEN, INTERNATIONALLY recognized specifications for encapsulating information important to the implementation of BIM.

These reference standards include:

- **IFC, XML & the data dictionary** – fundamental technologies used to encode, decode, and transmit data
- **BCF**
  - Represents a standard for communication between BIM Models – using XML - Separates communication from the model
  - Allows for all parties involved to transfer critical information and viewpoints between individuals independent of the software being used
- **LOD**
  - Developed jointly by AIA and AGC to guide model authors to define what their models can be relied on for allowing downstream users to understand usability and limitations of models they are receiving
  - Intent of this specification is to help explain LOD framework and standardize its use.
- **United States National CAD Standard® (NCS)**
  - Also a product of the National Institute of Building Sciences’ buildingSMART alliance™ Council
  - Industry is still heavily dependent on paper-centric and CAD format delivery methods
  - Intent not to force BIM users into a CAD workflow, merely to maintain stds when documents produced or exported to CAD
- **OmniClass** provides a standardized means of organizing project information, classifying BIM objects, and establishing preferred designations for object naming
### Terms and Definitions

**Formal rationalization and recognition of all terms in the various parts of the standard**

Ensuring consistency and clarity, even between different sections. Including, but not limited to, such terms as...

<table>
<thead>
<tr>
<th>Attribute</th>
<th>IFC Certification Procedure</th>
<th>Overview Map</th>
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<tr>
<td>BIM Implementation</td>
<td>Level of Development</td>
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<tr>
<td>BIM Life-Cycle Views</td>
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<td>Construction Delivery Method</td>
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<td>Cost – Avoidance</td>
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<tr>
<td>Data</td>
<td>Metadata, Administrative</td>
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<tr>
<td>Discipline</td>
<td>Metadata, Structural</td>
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<td></td>
<td>Object</td>
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</table>

Terms and Definitions are meant to formally state and define the terminology used in the industry, especially in relation to BIM. By having an “official” dictionary, contract language can be clear, if properly referenced and all parties can recognize what is meant when ideas such as Metadata, and Life-cycle Costs are used, as well as the differences between concepts like Level of Development and Level of Precision or Detail…
Next we have Information Exchanges which are meant to formalize the requirements of data exchange in a particular process, or subprocess of the Project Delivery and Operation.

**COBie**
Version 2 introduced COBie, the Construction Operations Building information exchange, created by the US Army Corp of Engineers. It captures data, through the Design, Procurement and Construction phases of a project, that is important to the Owner’s operation of the facility for it’s remaining lifecycle. Being the first formal IE adopted in the NBIMS-US, it has already made an impact in the way BIM is used to deliver many public sector projects, as well as large private sector facilities, like hospitals and higher education buildings.

The United States General Services Administration has provided the specifications for data exchange developed with their experience as the US Government’s landlord to hundreds of millions of square feet of facilities around the country and world.

**Lifecycle Information Exchange for Product Data (LCie)**
Defines COBieLite XML sub-schema for products and product type data exchanges throughout the facility life-cycle to be used for developing next generation of mobile and desktop applications for management of COBie data.

**Building Programming Information Exchange**
Deals with managing client’s requirements (even as they evolve). Objective is to register client’s needs in a computer interpretable format. Store information in a structured way, monitor changes and automate validation. Stimulate development of new tools to manage client needs.

**HVAC Information Exchange** - *Specification and standardization for representation of HVAC systems*
By standardizing representation of information, interested parties may more easily obtain relevant information across different software systems.

**Plumbing Information Exchange** - *Specification and standardization for representation of Water Systems*
Extends the detail described in the IFC4 specification to cover plumbing practices in North America.

**Electrical Information Exchange** - *Specification and standardization for representation of Electrical systems*
Extends the detail described in the IFC4 specification to cover wiring practices in North America.
And finally, we have Standard Practices, which are formal, tested guidelines to implementing BIM technologies and processes, often referring back to the other sections of the Standard. These guidelines include

Minimum BIM, 2nd Ed.
- Better describes the BIM Capability Maturity Model and its use

BIM Project Execution Planning Guide v2.1
- A structured approach for use of BIM on a project

BIM Project Execution Plan Content v2.1
- Supporting materials as part of the Guide

BIM Planning Guide For Owners
- Provides a structured approach for facility owners to plan adoption of BIM

Planning, Executing and Managing Information Handover
- Guidance on the transfer of project information from Design and Construction to the Owner

Mechanical, Electrical, Plumbing, and Fire Protection Systems (MEP) Spatial Coordination Requirements for Construction Installation Models and Deliverables
- Guidance to contractors/installers on optimal coordination methodology for BIM projects

Practical BIM Contract Requirements
- Requirements used by the USACE for BIM on design build projects

The Uses of BIM
- Defining a common language for the uses of BIM throughout lifecycle

And finally…

The Uses of BIM
Purpose is to define a common language, descriptions of concepts, workflows and organizational structures beyond just a simple glossary, for the uses of BIM so Teams can communicate the purposes for implementing BIM throughout lifecycle of a facility