

Unique Identifier for NIH Buildings, the Real Property Unique Identifier (RPUID) V1.0

Status of this Memo

This document proposes a Standard for the National Institutes of Health (NIH) and requests discussion and suggestions for improvements. Distribution of this memo is unlimited.

Table of Contents

1	Introduction.....	1
2	Background.....	1
3	Definition of Terms.....	2
4	Requirements	3
4.1	Scope	3
4.2	Uniqueness	3
4.3	Singularity	3
4.4	Persistence.....	4
4.5	Form	4
4.6	Data Model.....	6
5	Recommendations.....	7
6	References.....	8
7	Contact	8
8	Security Considerations	8
9	Changes.....	8
10	Author's Address	9
11	Originating Authority.....	9

1 Introduction

This standard recognizes and adopts the GSA-mandated and prescribed unique identifier for buildings NIH-wide. This identifier uniquely designates each and every NIH owned and leased building and satisfies the requirements for uniqueness, singularity, and persistence. Consequently, this standard recommends that the GSA-prescribed Real Property Unique Identifier (RPUID) be adopted as the authoritative business identifier for NIH buildings.

The *Real Property Unique Identifier* (RPUID) is a unique identifier for all real property assets that are required to be annually reported to the U.S. General Services Administration (GSA) to comply with Executive Order (EO) 13327, *Federal Real Property Asset Management* [1], under the direction of the Federal Real Property Council (FRPC). With respect to the National Institutes of Health (NIH), this reporting is done through the Department of Health and Human Services (HHS) and includes all property that NIH owns or leases (see Section 3). The RPUID is unique to an item of real property and allows for linkages to other information systems. The RPUID is assigned by the HHS entity reporting the asset within the prescribed format (see Section 4.5).

To support meaningful data analysis over time, the RPUID should never be changed by the OPDIV after it is first entered in the HHS's Automated Real Property Inventory System. Consequently, the RPUID must remain the same for each asset from year to year.

Internally to NIH, the RPUID is useful as an alternate key for building records.

The RPUID is beneficial because it:

- reduces the need for multiple copies of data related to buildings (e.g., separate records for each building alias), and
- improves interoperability by making it easier to join building data across independently developed and maintained databases.

2 Background

HHS is required to report to the U.S. General Services Administration (GSA) on HHS-owned assets and leases signed (executed) by an HHS entity, known as direct leases. This reporting is required to comply with Executive Order (EO) 13327, in accordance with guidance developed by the interagency Federal Real Property Council (FRPC). EO 13327, which was issued in February 2004, was created to promote efficient and economical use of the Federal

Government's real property assets. The EO established the interagency FRPC, the role of the Senior Real Property Officer, and the mandated creation of a centralized real property database.

In its guidance for such reporting (*2009 Guidance for Real Property Inventory Reporting* [2]), the FRPC requires a Real Property Unique Identifier (RPUID) be assigned to each real property asset (whether owned or directly leased) that is unique and that will allow for linkages to other information systems. Further, the RPUID must remain the same for each asset from year to year. The Real Property Unique Identifier is assigned by the Reporting Agency and can contain up to 24 alpha-numeric digits within the prescribed format (see Section 4.5). However, if a newly reported asset has the same RPUID as an asset that is already recorded in the centralized database, GSA will direct that the newer RPUID be modified to make it unique.

HHS, in its *Guidance for Real Property Inventory Reporting* [3], allows the reporting HHS entity to assign the RPUID but restricts the maximum length of the RPUID to 20 alpha-numeric digits, instead of the 24 digits allowed by GSA. Within NIH, the Division of Facilities Planning (DFP), Office of Research Facilities, Development, and Operations (ORFDO), Office of Management (OM), has the responsibility for assigning an RPUID to each NIH-owned or NIH directly-leased building, for annually reporting such real property assets to GSA through HHS, and for maintaining the authoritative RPUID list through FIMS, the Facilities Information Management System [4] (implemented in Archibus). In addition, DFP maintains a relationship with the HHS Federal Real Property Council representative.

Further, in his presentation to the NIH Administrative Data Working Group (ADWG) on June 18, 2010, Director Daniel Wheeland of the ORFDO recommended that the RPUID be used as an alternate key to integrate facility-related administrative data. This standard implements his recommendation, which was approved by the ADWG.

It is envisioned that the promulgation of the RPUID into other information systems and their related databases will occur in a stepwise fashion, in accordance with the approval of the particular business owners, beginning with those systems that already have the RPUID recorded within them, such as NIH Enterprise Directory (NED).

A subsequent standard will be developed that will fully define the data model for NIH buildings, including the specification of a Universal Unique ID (UUID).

3 Definition of Terms

For the purposes of this standard, the terms listed below are defined as follows:

Real Property: Land and all the things that are attached to it. (However, the purpose of this standard is to uniquely identify NIH buildings. The identification of land, in and of itself, is beyond the scope of this standard.)

Building: Property that is at the constructed-asset level. Typically, a permanent or temporary structure enclosed within exterior walls and a roof, and including all attached

apparatus, equipment, and fixtures that cannot be removed without cutting into ceiling, floors, or walls.

Facility: Permanent, semi-permanent, or temporary commercial, industrial, or governmental property such as a building, plant, or structure, built, established, or installed for the performance of one or more specific activities or functions. (For the purposes of this standard, the terms *building* and *facility* are used interchangeably.)

NIH-owned: Real property (for which the United States holds title), but for which the NIH exercises real property accountability.

NIH Direct Lease: A lease is a written agreement under which a property owner allows a tenant to use the property for a specified period of time and rent. A lease that is signed (executed) by NIH is called an NIH direct lease.

4 Requirements

4.1 Scope

A Real Property Unique Identifier (RPUID) shall be assigned to every building registered in the Facilities Information Management System (FIMS) [4]. The Division of Facilities Planning (DFP), which manages the operation of FIMS, has the authority to assign an RPUID to each NIH building (whether owned or directly leased) to comply with the stipulated GSA and HHS real property reporting requirements previously cited.

Rationale: Enables the use of the RPUID as an alternate key for building records.

4.2 Uniqueness

No two buildings shall be assigned the same RPUID.

Rationale: Enables the use of the RPUID as an alternate key for building records.

4.3 Singularity

A building (whether owned or directly leased) shall not be assigned more than one RPUID.

Rationale:

- Complies with GSA and HHS real property reporting requirements.
- Unambiguously identifies a building.
- Simplifies applications by eliminating the need to handle multiple aliases for the same building.

- Avoids multiple records for the same building in databases and directories.

4.4 Persistence

A building shall have the same RPUID for the life of the asset.

Rationale:

- Complies with GSA and HHS real property reporting requirements.
- Supports applications that must retain historical information related to a particular building.

4.5 Form

The RPUID is an alpha-numeric string of up to 20 characters in the form dddd-aa-aaa...aaaa, for example, 40506-00-0013. (“d” represents a numeric digit, and “a” represents an alpha-numeric character. Typically, the last segment of the identifier is 4 characters long, but it may be up to 11 characters in length.) The usual form of the RPUID is shown below:



Region identifies a GSA Region, of which there are 12 throughout the United States. For example, “40506” represents GSA’s National Capitol Region. NIH currently occupies/manages 326 buildings within the National Capitol Region. Another example, “80901” represents GSA’s Rocky Mountain Region. NIH currently occupies/manages 38 buildings within the Rocky Mountain Region, all of which are in Montana.

Campus identifies a specific site or location within a GSA Region that may have a grouping of buildings. Within a particular GSA Region, each location that has NIH buildings is assigned a unique two character identifier. For example, NIH’s main location (its Bethesda Campus) is identified as “00”. Poolesville, MD (which is also in the National Capitol Region) has a campus identifier of “A0”. The NIH buildings that are in the Rockville area, such as the Fernwood building, have a campus identifier of “C0”, etc. The Campus identifiers are determined and assigned by the DFP, ORFDO.

Building identifies a specific building within a particular Region and Campus and its designator may be from 4 to 11 alpha-numeric characters in length. The Building identifiers¹ are determined and assigned by the DFP, ORFDO.

The combination of the three sub-elements² of the RPUID uniquely identifies each and every NIH building. For example:

- The RPUID for the Claude D Pepper Building (Building 31) is 40506-00-0031.
- The RPUID for the Fernwood Building (10401 Fernwood Rd.) is 40506-C0-10401.
- The RPUID for the Guard House at the NIH Animal Center in Poolesville, MD is 40506-A0-0115

Rationale:

- Complies with the GSA-mandated format for unique real property identifiers, according to the assignments made by the Division of Facilities Planning (DFP).

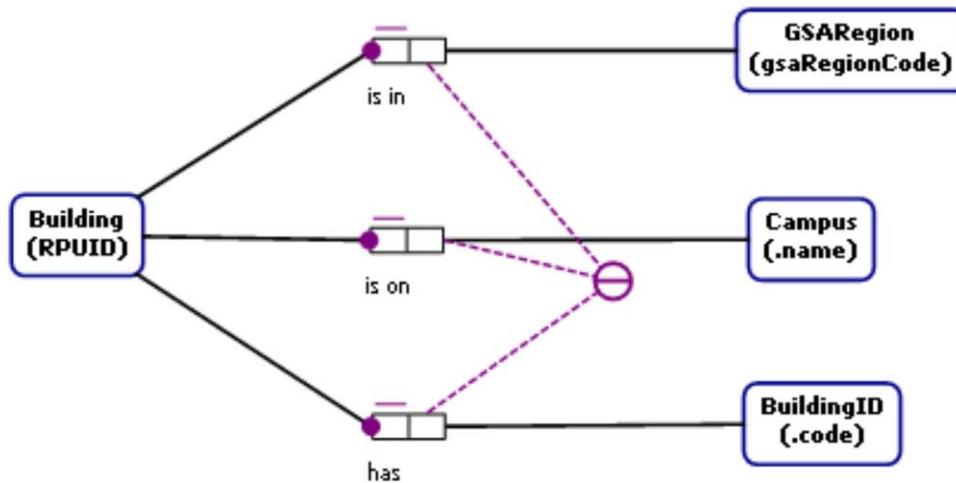
¹ For reporting purposes to GSA, if an Agency has more than one direct lease within particular building, then each lease is to be separately identified and reported by adding a suffix to the primary identifier for the building. For example, if building 40506-C0-10401 had three direct leases, the identifiers for those leases could be 40506-C0-10401a, 40506-C0-10401b, and 40506-C0-10401c. For the purpose of this standard, however, only the primary building identifier is used to designate a particular leased building, without any lease suffixes.

² The three sub-elements should be stored as separate data elements within information systems that contain building-related data (see Section 5). The hyphens shown in the examples are mere separators and do not need to be stored.

4.6 Data Model

The following graphically and verbally depict the data model for the three sub-elements (or entities) of the RPUID

Graphic Model:



Verbalized Model:

Building is an entity type.
Reference Scheme: Building has RPUID.
Reference Mode: RPUID.

Fact Types:
Building is in GSARegion.
Building has BuildingID.
Building is on Campus.
Building has RPUID.
GSARegion is an entity type.
Reference Scheme: GSARegion has gsaRegionCode.
Reference Mode: gsaRegionCode.

Fact Types:
GSARegion has gsaRegionCode.
Building is in GSARegion.
Campus is an entity type.
Reference Scheme: Campus has Campus_name.
Reference Mode: .name.

Fact Types:

Campus has Campus_name.

Building is on Campus.

Building is in GSARegion.

Each Building is in exactly one GSARegion.

It is possible that more than one Building is in the same GSARegion.

Building has BuildingID.

Each Building has exactly one BuildingID.

It is possible that more than one Building has the same BuildingID.

Building is on Campus.

Each Building is on exactly one Campus.

It is possible that more than one Building is on the same Campus.

BuildingID is an entity type.

Reference Scheme: BuildingID has BuildingID_code.

Reference Mode: .code.

Fact Types:

BuildingID has BuildingID_code.

Building has BuildingID.

For each GSARegion, BuildingID, and Campus,
at most one Building is in that GSARegion and
has that BuildingID and
is on that Campus.

5 Recommendations

1. NIH business processes and applications should routinely use the RPUID to uniquely identify NIH buildings.
2. Applications that contain building-related data should store the three sub-elements of the RPUID (see Section 4.5) as separate data elements.
3. The RPUID of a particular building should be formed by concatenating the corresponding three sub-elements, using hyphens as separators for display purposes.
4. NIH business processes and applications should obtain and use the RPUID for a building from the authoritative FIMS [4] source. A SOA component for FIMS will be developed to provide directly the RPUID for a specific building or for a list of buildings. In the interim, an authoritative RPUID listing can be obtained from FIMS upon request (by sending a request to fimsa@mail.nih.gov).

6 References

- [1] Executive Order 13327, *Federal Real Property Asset Management*, <http://www.gsa.gov/portal/content/101584>.
- [2] Federal Real Property Council, *2009 Guidance for Real Property Inventory Reporting*, http://www.gsa.gov/graphics/ogp/2009_Guidance_for_Real_Property_Inventory_Reporting.pdf.
- [3] Office for Facilities Management & Policy, *HHS Guidance for Real Property Inventory Reporting*, Version 5, August 2009, <http://www.hhs.gov/asa/ofmp/realpropertyreportingguidance.pdf>.
- [4] Facilities Information Management System (FIMS), *Office of Research Facilities – Posted Space Home Page*, <http://orfweb.od.nih.gov/sites/postedspace/default.aspx>.
- [5] *NIH Enterprise Directory Home Page*, <http://nedinfo.nih.gov>.

7 Contact

To contact the NIHRFC Editor, send an email message to EnterpriseArchitecture@mail.nih.gov.
To comment on this or other NIHRFCs, visit the NIHRFC Discussion Area at <http://enterprisearchitecture.nih.gov/YourPart/Collaborate/NRFCDiscussionArea.htm>.

8 Security Considerations

This NIHRFC raises no security issues.

9 Changes

Version	Date	Change	Authority	Author of Change
0.1	8/20/2010	Original draft	Dan Wheeland	Ricardo Rodriguez
0.2	10/8/2010	Incorporated feedback from Community Review	Dan Wheeland	Ricardo Rodriguez

Version	Date	Change	Authority	Author of Change
0.3	10/21/2010	Incorporated stipulations from the ITMC EA Subcommittee and ARB	Dan Wheeland	Ricardo Rodriguez
0.3	02/22/2012	Reviewed & Approved by OD/CIO	Andrea Norris	Saloumeh Jazayeri
1.0	02/28/2012	Reported to the ARB that it was approved	Helen Schmitz	Saloumeh Jazayeri
1.0	3/01/2012	Finalized for publication and further enumerated the responsible organization	Dan Wheeland	Ricardo Rodriguez

10 Author's Address

Ricardo Rodriguez
Information Technology Branch, ORS
National Institutes of Health
9000 Rockville Pike
MSC 2263
Bethesda, Maryland 20892
Phone: 301-435-3525
Email: rodrigur@mail.nih.gov

11 Originating Authority

Daniel Wheeland, Director
Office of Research Facilities, Development, and Operations (ORFDO)
National Institutes of Health
9000 Rockville Pike
MSC 5759
Bethesda, Maryland 20892
Phone: 301.594.0999
Email: wheeland@mail.nih.gov