Entity / Hierarchy Refresh

Mark Molnar
Office of Institutional Analysis

Challenge

- How would we code transaction data to represent common elements across major processing systems (ex. Chemistry majors, chemistry faculty, chemistry space, chemistry accounts)?
- How would we structure these elements to provide a commonly accepted representation of the institution?

What you will learn today:

- What is Entity\Hierarchy?
- Who maintains it?
- Why should I care?
- How is it related to systems like SIRI and HUB?
- How do I submit changes?
- Closing thoughts.

What is Entity/Hierarchy ?

Official system of record for campus operational elements.

- **First deployed in the early 1980's.**
- **Has evolved in response to changing business needs.**
- **Provides a centrally managed means to identify common elements across systems.**
- **Updated regularly via manual process.**
- **Maintained by the Office of Institutional Analysis.**

Why should I care about Entity/Hierarchy?

Common structure facilitates the following operations:

- **Reporting**
- **Analytics**
- **Processing**
- **Security**
- **(More)**

What details do I need to know?

- Basic structure.
- Common links.
- How to request changes.

Basic Structure - ENTITIES

Officially recognized campus elements assigned a unique 4-digit number to provide common identifier across systems (ex. Chemistry = 0327).

Structural:

- Departments, Centers, Offices (more)

Functional:

- Majors, Courses, Space (more)

Additional unique dimensions are also associated with entities:

- 3-character abbreviation (ex. Chemistry = CHE)
- Affiliations for reporting and entity usage by other systems (ex: Personnel)

Basic Structure - HIERARCHY

A unique 10-digit number to define *Entity* placement in a logical order.

The 10-digit number is subdivided into five 2-digit groups.

Each 2-digit group *generally* signifies a different level in the campus organizational tree.

There are currently 2 logical orders supporting campus operations:

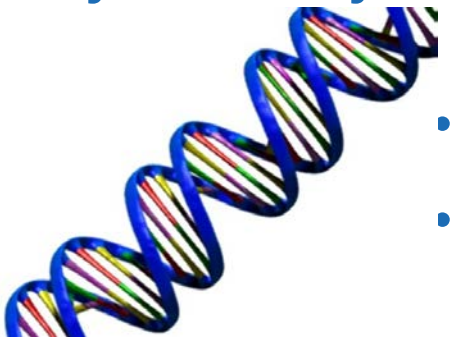
- Official University
- SIRI Organizational Reporting

Basic Structure - Examples

Element	Entity	Abbreviation	Hierarchy
College of Arts and Sciences	1084	ARS	07 27 00 00 00
Chemistry	0327	CHE	07 27 23 00 00
Medicinal Chemestry	0510	MCH	07 27 23 01 00
Nursing General Space	1504	NGS	08 14 00 00 01
Baldy Center	1481	BCT	07 10 00 08 00

Common Elements

Entity/Hierarchy "DNA" is incorporated in many campus systems:



- **SIRI – Entity numbers, descriptions**
- **HUB – Entity numbers, abbreviations, hierarchy, descriptions**
- **Others**

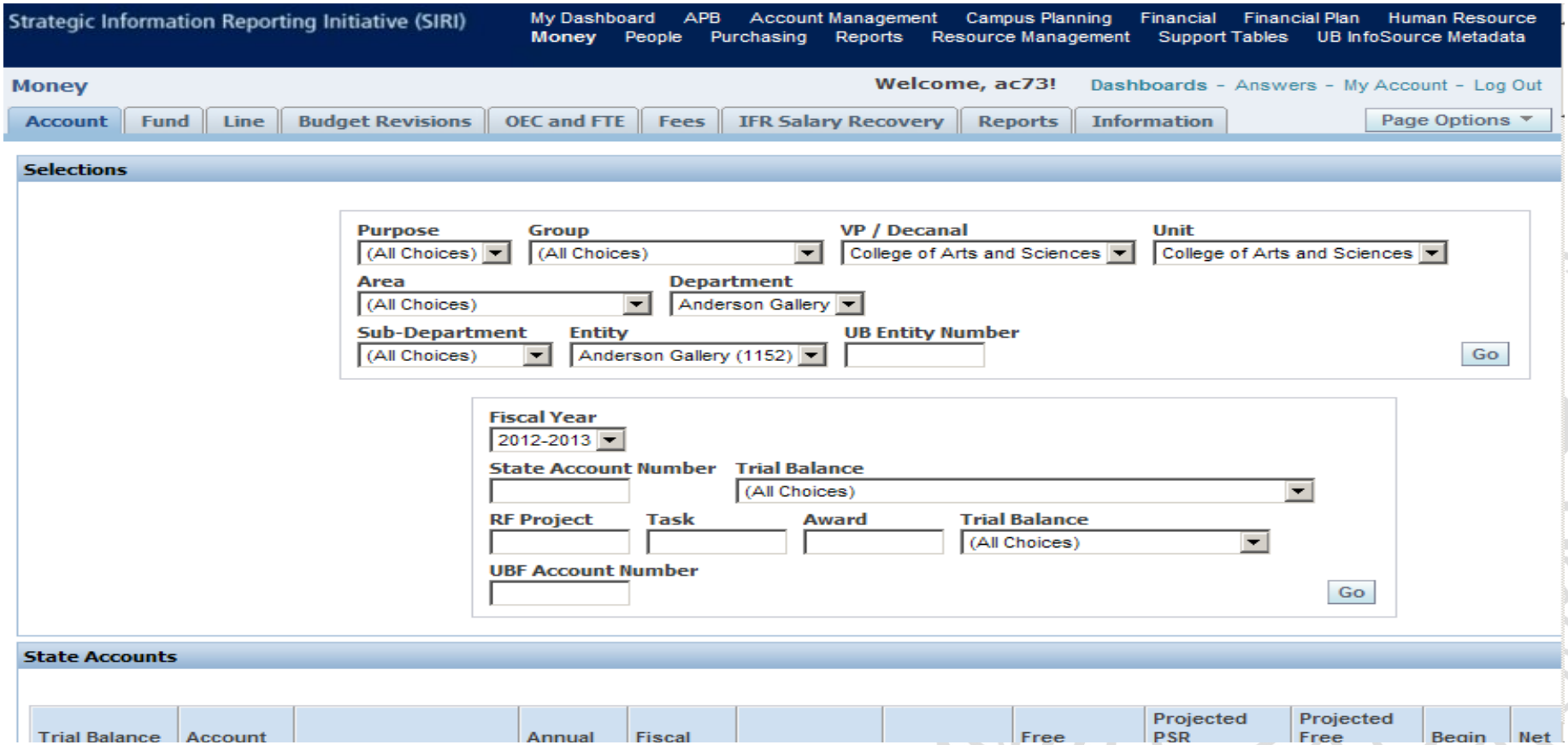
Common Elements - SIRI

SIRI incorporates common Entity/Hierarchy elements into its processing:

- Underlying financial account numbers are mapped to entities
- Entity names drive major SIRI report groupings

SIRI reporting is driven by a customized Entity/Hierarchy view “tuned” specifically to the policy discussion (ENTITY_O).

Common Elements – SIRI Example



Common Elements – HUB

- UB's student operations are represented in HUB via Academic Structure.
- HUB incorporates Entity/Hierarchy into Academic Structure:
  - Majors use entity abbreviations (CHE012R0A).
  - Course subjects also identified by abbreviation (CHE).
  - Programs identified by hierarchy (27R3 = CAS Bachelor).
  - Many more.
- Changes need to be carefully considered.

Requesting Changes – Why?

Evolving structural and functional needs drive changes:

- Course name revisions.
- New majors.
- Space additions.
- New departments / name changes.

These need to be correctly recorded within the Entity/Hierarchy system.

Must also consider impact to other systems.

What's the change process?

There is no such thing as a simple Entity/Hierarchy change.

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Requesting Changes – General Considerations

Entity/Hierarchy structure must conform to a standardized business model validated by each unit.

- All functional changes will require unit University Business Officer (UBO) approval.
- All structural changes will require UBO, Dean/VP *and* Provost approval.
- OIA will coordinate Provost approval.

Requesting Entity Changes – Process

Discuss your campus need with unit UBO.

Determine if the request is Structural or Functional

If, after discussion, you decide to create a formal change request, do this:

For changes requiring a new entity, go to:
https://www.buffalo.edu/content/dam/www/provost/files/oia/Forms/Entity/Entity-Request-Form-New.pdf

For changes to an existing entity, go to:
https://www.buffalo.edu/content/dam/www/provost/files/oia/Forms/Entity/Entity-Request-Form-Existing.pdf

Complete the form

For **FUNCTIONAL** changes:
Obtain UBO approval

For **STRUCTURAL** changes:
*Obtain UBO *and* Dean/VP approval*

Forward completed request form to:

Laura Szefel: lmszefel@buffalo.edu

Mark Molnar: mmolnar@buffalo.edu

Implementation must be coordinated with other campus systems.

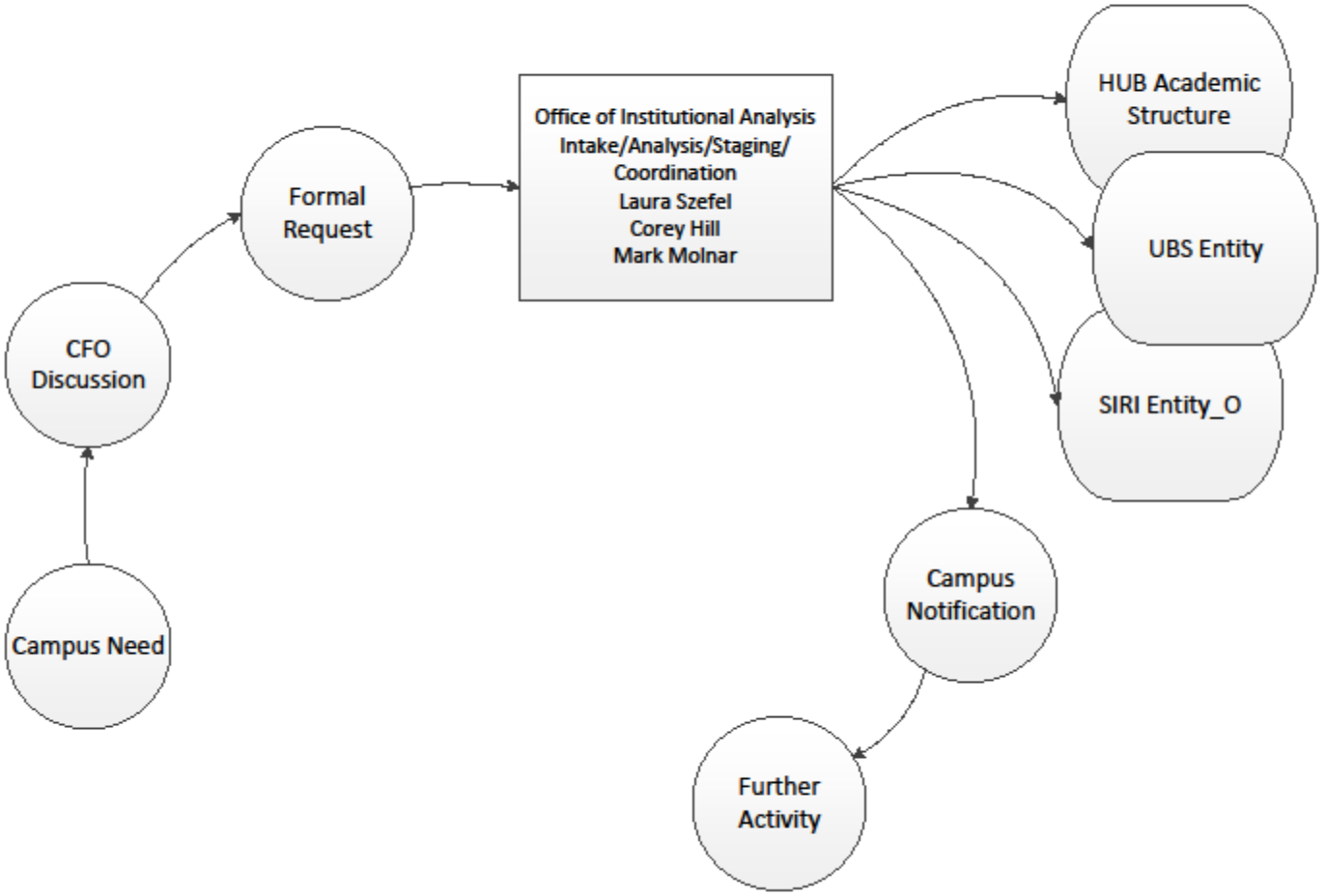
Quick changes:
All non HUB Academic Structure/Function
New HUB Academic Function

Slow Changes:
All HUB Academic Structure
Existing HUB Academic Function

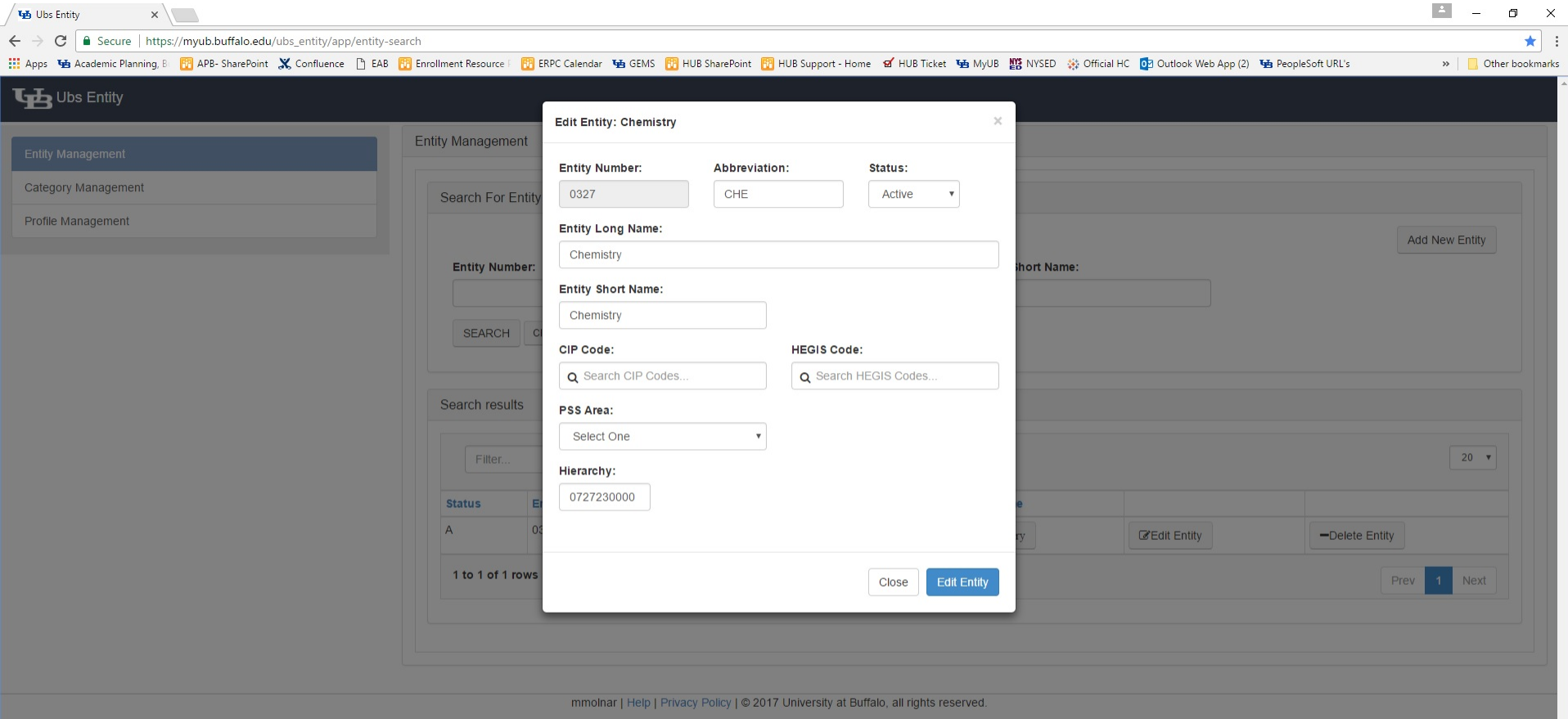
OIA will contact you if additional discussion is required.

Notification will be sent to the campus via email once the change has been made.

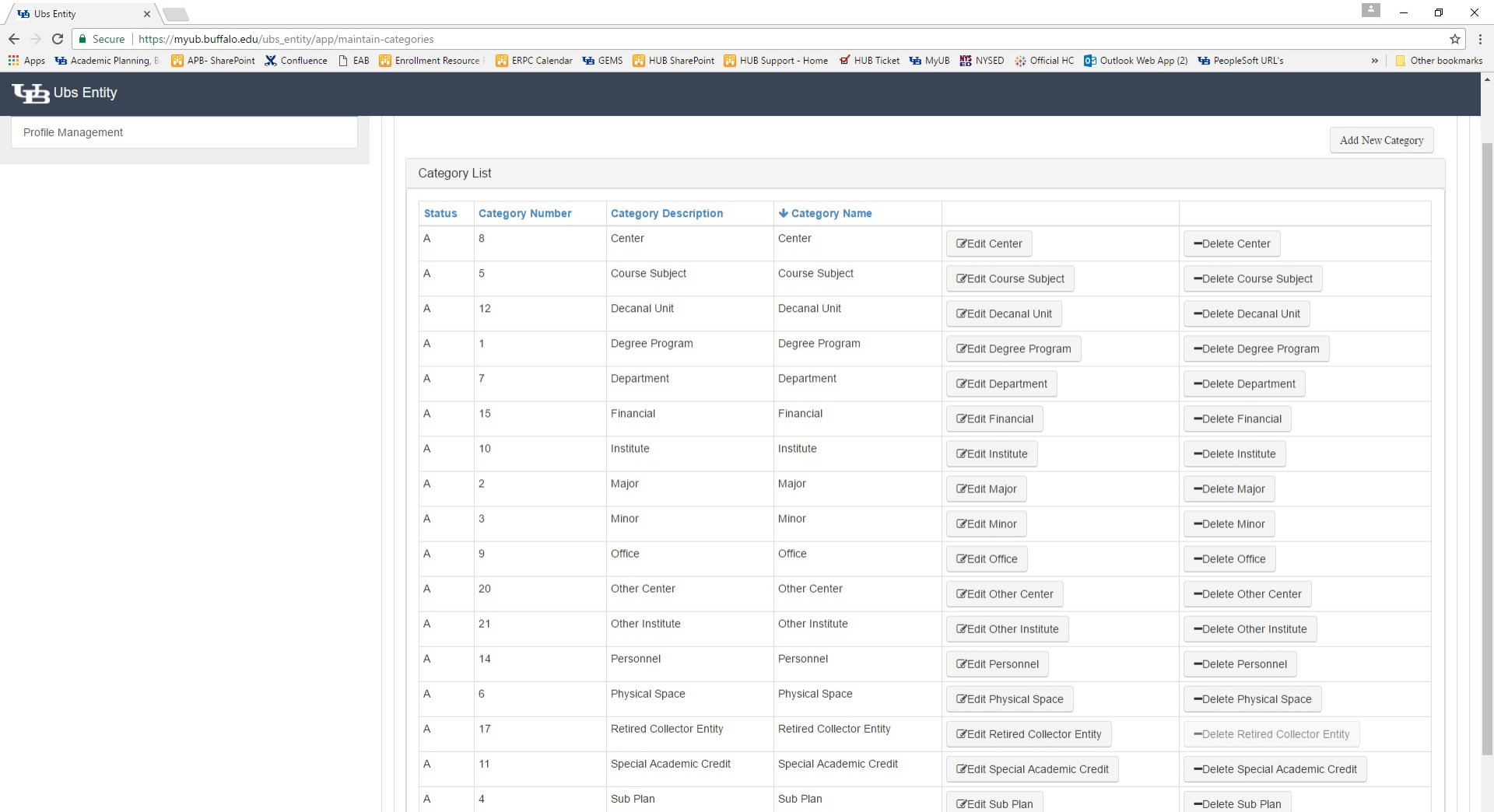
Entity/Hierarchy Implementation Process



Implementation – UBS Entity

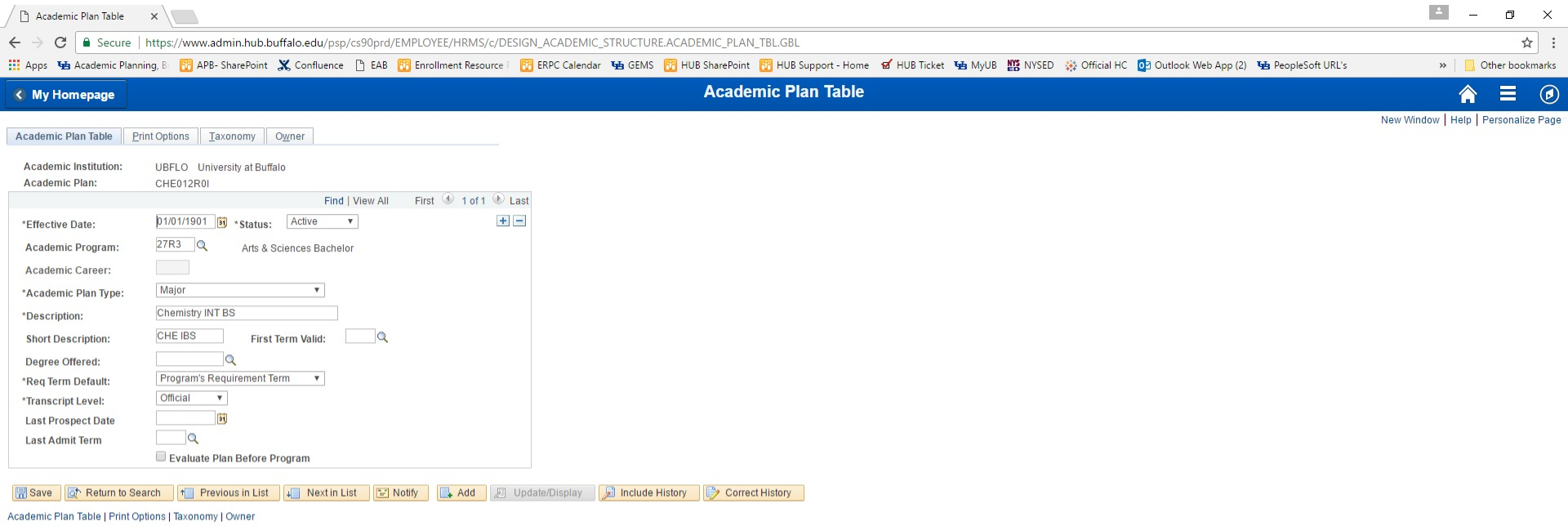


Implementation – UBS Entity

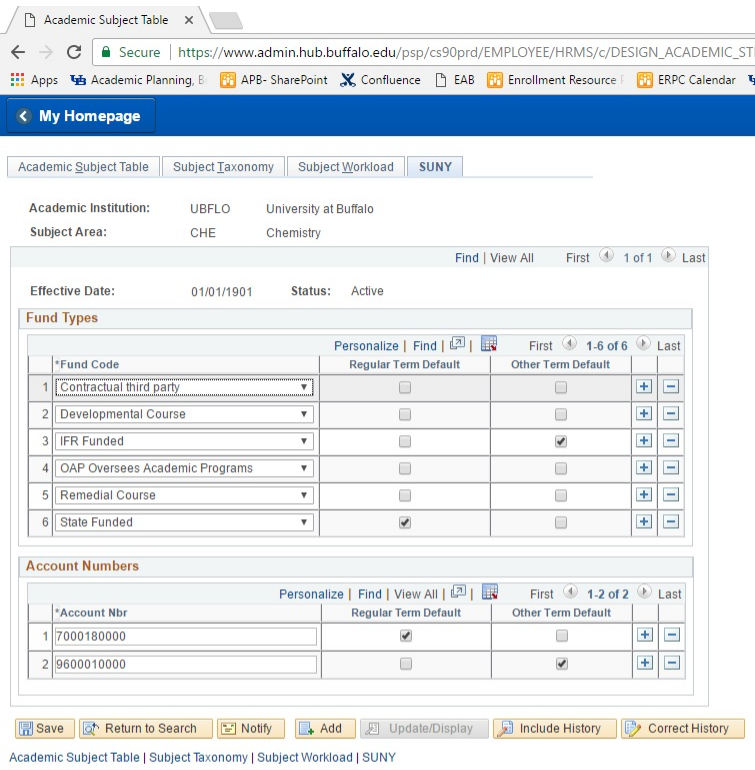


Status	Category Number	Category Description	Category Name		
A	8	Center	Center	Edit Center	Delete Center
A	5	Course Subject	Course Subject	Edit Course Subject	Delete Course Subject
A	12	Decanal Unit	Decanal Unit	Edit Decanal Unit	Delete Decanal Unit
A	1	Degree Program	Degree Program	Edit Degree Program	Delete Degree Program
A	7	Department	Department	Edit Department	Delete Department
A	15	Financial	Financial	Edit Financial	Delete Financial
A	10	Institute	Institute	Edit Institute	Delete Institute
A	2	Major	Major	Edit Major	Delete Major
A	3	Minor	Minor	Edit Minor	Delete Minor
A	9	Office	Office	Edit Office	Delete Office
A	20	Other Center	Other Center	Edit Other Center	Delete Other Center
A	21	Other Institute	Other Institute	Edit Other Institute	Delete Other Institute
A	14	Personnel	Personnel	Edit Personnel	Delete Personnel
A	6	Physical Space	Physical Space	Edit Physical Space	Delete Physical Space
A	17	Retired Collector Entity	Retired Collector Entity	Edit Retired Collector Entity	Delete Retired Collector Entity
A	11	Special Academic Credit	Special Academic Credit	Edit Special Academic Credit	Delete Special Academic Credit
A	4	Sub Plan	Sub Plan	Edit Sub Plan	Delete Sub Plan

Implementation – HUB Academic Structure



Implementation – HUB Academic Structure



Implementation • SIRI (ENTITY_O)

ID	Hierarchy	L8-Entity	L8-Entity-Name	L1-Purpose	L1-Purpose-Entity	L2-Group	L2-Group-Entity	L3-VP-Decanal	L3-VP-Decanal-Entity
438	0707000300	1128	NYS Center for Engr Design and Industrial Innovation	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
1629	0707000400	1738	Materials Science and Engineering	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
1723	0707000500	1822	Computational and Data-Enabled Science and Engineering	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
1940	0707000501	2038	Computational and Data-Enabled Sciences	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
1724	0707000600	1823	Institute for Bridge Engineering	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
1725	0707000700	1824	Inst for Sustainable Transportation and Logistics	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
436	0707000800	1044	Center for Industrial Effectiveness	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
1726	0707000900	1825	Home Health and Well-Being Via Adaptive Smart Env	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
2089	0707001000	2186	Shared Instrumentation Laboratories	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
433	0707002000	0770	Multi-Discipl. Ctr for Earthquake Engrg. Research	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
439	0707003000	1134	Center for Multisource Information Fusion	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
432	0707004000	1133	Center - Global Enterprise Management	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
435	0707005000	0881	Inactive Engineering Degree Programs	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
1776	0707050000	1874	Materials Design and Innovation	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
405	0707100000	0304	Chemical and Biological Engineering	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
406	0707200000	0305	Civil, Structural and Environmental Engineering	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
410	0707200001	1367	Itu Civil Engineering Bachelor Program	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
407	0707200100	1125	Environmental Engineering	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
411	0707200101	1368	Itu Environmental Engineering Bachelor Program	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
408	0707200200	1206	Structural Engineering	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
409	0707200300	1360	Information Assurance - Engineering	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
2023	0707200400	2120	Sustainable Transportation and Logistics	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
418	0707300000	0665	Electrical Engineering	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
420	0707300100	1384	Electrical Engineering Online	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
419	0707302500	0746	Engineering Physics	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
425	0707320000	0666	Engineering Science	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301
423	0707350000	0677	Engineering Instruction	Academic	1512	Professional Programs	1514	School of Engineering and Applied Sciences	0301

Where Are The Change Forms Located?

Office of Institutional Analysis web site at:

https://www.buffalo.edu/provost/oia.html

Follow the “Entity/Hierarchy System” links.

Closing Thoughts

- OIA assumes once an entity request has been moved forward it has been validated by the appropriate UBO.
- Entities are never inactivated – just retired.
- Abbreviations can never be migrated from one entity to another.
- Not all reporting challenges are entity-driven.
- ***Please stay informed***, especially if you incorporate Entity/Hierarchy data and/or business rules within local systems.

Finally

- THERE IS NO MAGICAL AUTOMATED PROCESS THAT SYNCHRONIZES ENTITY/HIERARCHY CHANGES ACROSS SYSTEMS – IT'S ALL DONE BY HAND.

QUESTIONS?