

Operational Reporting Steering Committee

SPRADDR_ATYP_CODE Report

Background

The tool of choice for reporting against Banner data (Hyperion Brio) is no longer supported by the vendor. In partnership with the University Registrar's Office and the Operational Reporting Steering Committee, ITS Student and Academic Support Systems (IT SASS) is working on transitioning users from Brio to a more secure, sustainable and modern reporting tool, Jaspersoft. In Jaspersoft, data is curated from Banner into various 'Domains' which serve as the basis for reports. With the goal of developing "common" domains or data sets that can be consumed in different ways by users across the university, the IT SASS team confirmed key terms are being used inconsistently, unclear definitions are causing confusion, and, in some cases, leading to incorrect data. To build accurate and usable reports, we would need standard, published, and agreed upon definitions for key terms. The following report is based on interviews with SIS stakeholders across campus, input from the Operational Reporting Steering Committee and the IT SASS technical leads.

Summary

Analysis of student addresses revealed significant challenges for many Yale schools and departments. Overly customized address types (ATYP) and varying practices around data entry have resulted in student address data that is inconsistent and incomplete. Offices often lack information that is required to execute specific processes, a reality that blocks or delays vital university procedures. At the same time, students are unclear on the purpose and use of different address types and frequently enter the same types of data in varying ways.

In view of these challenges, the Operational Reporting Steering Committee has compiled a list of policy and practice recommendations to minimize the primary pain points and improve data quality for student addresses. The committee recommends that Yale should:

1. Mandate and enforce a requirement that all students maintain an active address via Student Self-Service Banner (SSB). The required address type should be consistent across all schools.
2. Provide students explanatory text about address types and uses in the self-service application.
3. Simplify address types in Banner by inactivating unused address types in both SSB and Banner Admin pages.
4. Inactivate K1, K2, and K3 addresses and eliminate the SSB page that allows Yale College students to insert or modify these three addresses.
5. Rename or repurpose specified active addresses to match current practice and need.
6. Reevaluate the current practices around HS – High School addresses.
7. Enforce an end date for short-term address types.
8. Develop a publicly accessible data dictionary for all active address types.
9. Build consistency across schools in terms of which address types are pushed from Admissions applications.

Current Pain Points

Pain points around address types are shared by multiple offices across campus. The documented pain points helped drive the committee's recommendations.

Pain Point: No Current Address

While many offices with a functional need for a student address [use complex logic](#) to search for an active student address across the different ATYP codes, there are still many current students without an active physical address. An address requirement is enforced for a few specific populations, e.g. undergraduate students living off-campus and international students on a Yale-sponsored visa. However, the enforcement method and mandated address type varies by population. Most students have no mandated address type at all.

Meanwhile, some offices on campus maintain shadow systems outside of the Banner database and require students to submit an address update each term or each year. If a student has already submitted an address update to their primary department or residential college, they may erroneously assume that the data will be updated automatically across all Yale systems.

Finally, all students are permitted to add an "end" date to their last active address in the self-service application, so even students with mandated address requirements can terminate their final address.

Departments who require a current address include:

- Financial Aid (award letters)
- OISS (SEVIS requirements)
- Student Accounts (tax documents & billing)
- Student Employment (student employment eligibility is contingent upon having a current US address)
- Yale Health (1095 tax documents & billing)

Pain Point: Data Quality & Ambiguous Address Definitions

While students can insert a wide range of address types in the self-service applications, the purpose of each address type is not defined for students. As a result, students lack clarity on which addresses should be updated and how downstream offices will use the data they enter. For example, two different students in the same school may enter their local, off-campus address using different ATYP codes.

Because the purpose of different addresses is unclear and addresses are not consistently enforced, students may not bother to update or terminate old addresses loaded from admissions applications.

Finally, certain address types were intended for use by only a subset of the student population which does not match current practices. Applications that pull student addresses from Banner often use logic that was written based on the intended use of a particular address type. However, since actual practice does not necessarily follow intended use, schools and departments may struggle to identify the correct address for a student. The logic governing hierarchy may query Banner for different address types by school, even when the address will be used for the same purpose, regardless of school (e.g., a mailing address for tax documents).

Examples include:

- Graduate students living in certain on-campus housing arrangements cannot receive mail at those addresses; however, they are still instructed to designate their non-mailing, on-campus address as “Mailing” since that type is intended to serve as the local address. However, the expectation that a “Mailing” address is synonymous with a “Local” address is not explained to students. Many departments are also unclear on this distinction.
- Yale College students may enter their local, off-campus address as “MA” (originally intended to serve as the local address for Graduate & Professional School students only) instead of the intended “UO” (Undergraduate Off Campus) since this distinction is not communicated to students anywhere.
- The Term Data Update in the Student Self-Service application gives some instructions around address requirements, but most of the listed requirements are not actually enforced in any application.

Pain Point: Emergency Contact Addresses

There is considerable data quality issues and confusion about the difference between two different emergency address tables (K1, K2, K3 ATYPs in SPRADDR and SPREMRG) currently used in Banner. The emergency addresses in these two tables are updated on different pages in the Student Self-Service application, and the data entered in one table has no relationship to the other table. Examples of the emergency address data issues include:

- A student may have the same person listed as the “emergency contact” with a different name and contact information in the two tables. This is a data quality issue.
- Only Yale College students can update the emergency contacts stored in SPRADDR, yet some departments are not aware of this distinction.
- Many emergency contact reports query for the K1, K2, K3 (SPRADDR) addresses; however, only SPREMRG emergency contacts are part of the Term Data Update. If students update the parent address in SPREMRG only, not SPRADDR, the emergency reports looking at K1, K2, K3 addresses will not reflect the updated information.
- K1, K2, K3 address types are limited to one father, one mother, and one “other”. Thus, students with two mothers or two fathers are unable to enter data accurately.
- The SIS default of K1 as “father” and K2 as “mother” can produce poor data quality since it may not align with a student’s primary or secondary emergency contact.

Recommendations

In order to mitigate these consistent pain points and improve data quality, the committee recommends that Yale should:

1) Enforce a Single Address Type Across All Schools

The committee proposes designating the PR – Permanent Address as the active address type required for all students. In making this recommendation, the committee considered which address type would be best suited to meet the minimum requirements for the broadest number of offices.

This requirement should be enforced by:

- Blocking submission of the Term Data Update if the address requirement is not met.
- Preventing students from adding an “end” date to their last address in the self-service application. Students should be required to enter an active address first, before adding an end date to the current address.

The address should be:

- Generally, a US address since Student Employment requires a US address in order to work on campus
- An address where students can receive tax documents and bills

Although the committee considered BI (Billing), MA (Mailing), and PR (Permanent) for the mandated type, the committee is recommending enforcement on the PR address since it will meet both URO and Financial Aid needs. However, students who work on-campus will need to maintain a Mailing and/or Local address, in addition to the PR, if their PR address is not in the US (the on-campus hiring process requires a US address, but many students have an international PR).

Implementation Considerations

Banner 9 does not have a native validation process. If Yale would like to enforce a mandatory address in Student Self-Service, this would require the creation of a custom page in Page Builder. Yale has been moving away from customizations in SSB. One alternative to a completely custom address page would be exploring whether addresses could be enforced in the Term Data Update page.

If a custom address update page is desired, the technical team recommends turning off the native address update block and creating a link to the custom page in the self-service application. If a custom page is created, it could be tailored to meet multiple committee recommendations, including preventing students from ending their last mandated address record unless they first enter a new address and providing detailed descriptions of address types to students. However, a custom address page would require developer resources and consideration during future Banner deployments.

It is also important to note that enforcing a mandatory address in Student Self-Service may not capture the entire Yale student body. Students in schools that do not embed registration links in SSB (like Architecture) may not be forced to maintain an accurate address record.

Currently, ITS is creating a job for OISS that would automatically send emails to students who do not have an active ‘RL’ address type. It is possible this job could be adapted to serve a broader need across campus. The technical team also recommends partnering with the Student Experience project to add address alerts to the student landing page through “Text Managers”, currently in development.

Any changes to required addresses will necessitate an in-depth technical review to check for database code and applications that apply logic based on the current practice around addresses.

Also note that if the ‘BI’ address is not selected as the mandatory address type, the committee recommends inactivating this type. If the “Billing” address is inactivated or deprecated, the ITS technical team would need to update views and code related to:

- Flywire
- Slate (Admissions)

Lead: Functional: Shonna Marshall, University Registrar’s Office; Technical: Kate Hathaway, ITS

[Update 10/2020: With the creation of a new Banner Pagebuilder Address page in SSB, all students must now enter a Permanent Address **and** a Local Address. Yale College students living on-campus do not need to enter a Local Address, but when UO is required, students must enter a Local address before they can certify Term Data Update. International Students must also enter an RL and an NU address. The PR, NU, and RL address types cannot be end-dated by the student without inserting a new address of the required type.

We are now leveraging centralized hierarchies for Billing and AR located in GTVSDAX to feed various applications.]

2) Provide Address Definitions to Students

Provide a definition of the address types and uses to students in the self-service application. Adding explanatory text to the Banner Student Self-Service application should enhance data quality by promoting more consistent data entry.

Implementation Considerations

Native Banner 9 Student Self-Service does not allow for customized text on the address page. The only way to provide explanations on the Banner Self-Service address update page would be to create a custom address page in SSB via Page Builder. However, because the Term Data Update page is a Yale customization, it is possible to add address definition text on this page.

Lead: Kate Hathaway, ITS

[Update 10/2020: The new Banner Pagebuilder Address page in SSB displays a definition of each available address type to students on the main page. When students open a modal window to add a new address or update an existing address, the drop-down menu of available address types includes an abbreviated description of the type]

3) Inactivate ATYP Codes

Currently, there are 25 unique ATYP codes available in Banner. Not all of the address types can be used by students in the self-service application. Many of the current ATYP codes were created for use cases that no longer exist. The following addresses should be inactivated in Banner Admin pages:

- AS – ASC Preferred Address -- [6/12/2020: STVATYP Description updated to ‘DEPRECATED’]
- BI – Billing [6/12/2020: STVATYP Description updated to ‘DEPRECATED’]
- BU – Business [6/12/2020: STVATYP Description updated to ‘DEPRECATED’]
- DR – Dissertation Reader [6/12/2020: STVATYP Description updated to ‘DEPRECATED’]
- PA – Parent [6/12/2020: STVATYP Description updated to ‘DEPRECATED’]
- RA – G&P Recruit/Admissions Address [6/12/2020: STVATYP Description updated to ‘DEPRECATED’]
- SE – Seasonal Address
- ZC – CSS Mailing Address [6/12/2020: STVATYP Description updated to ‘DEPRECATED’]

The following address types should be inactivated in both Banner Admin and Student Self-Service:

- TL – Temporary Location [6/12/2020: STVATYP Description updated to ‘DEPRECATED’]

- YB – Yale Station Box [6/12/2020: STVATYP Description updated to 'DEPRECATED']

Implementation Considerations

Turning off address types in Student Self-Serve should have a low technical impact. However, inactivating address types in Banner admin pages would require the deletion of all student data associated with that address type first before the type could be completely inactivated.

In lieu of deleting address types for which data exists, the description for these addresses could easily be changed to “deprecated”. While changing the description would not prevent staff from entering a deprecated type, users would be able to quickly identify address types that should not be used.

Deprecating address types will require an in-depth technical review to check for database code and applications that adhere to logic based on the current practice around addresses. Because telephone numbers were linked to address types until 2019, the SASS IT team will need to investigate the potential impact on phone numbers as part of the technical review.

Lead: Functional: TBD; Technical: Kate Hathaway, ITS

[Update 10/2020: Students can no longer update or add deprecated address types in self-service. Of the deprecated address types, only a student’s active billing address is still displayed in self-service with a note directing the student to enter a permanent or mailing address. Students can copy their existing billing address to a different type, but they may not update the deprecated billing address.]

4) Inactivate K1, K2, K3 Emergency Contacts

Because K1, K2, and K3 address types are currently pushed to Banner from the Slate Admissions process, updated via a customized Student Self-Service page, and queried in the student reporting space, the technical and functional impact of inactivating these three types should be considered separately from other types that are slated for inactivation.

- K1 – 1st Emergency Contact/Family
- K2 – 2nd Emergency Contact/Family
- K3 – 3rd Emergency Contact/Family

Implementation Considerations

Deprecating K1, K2, and K3 address types will require an in-depth technical review to check for database code and applications that adhere to logic based on the current practice around addresses. Known considerations include:

- Remapping emergency contact data fields to the SPREMRG table from the Admissions push
- Possible remapping of the data push from Banner to Hopper (alumni)
- Numerous student reports in Brio and Jaspersoft will need to be updated to pull data from the correct fields.
- Integrations and views

The technical team expects to identify additional areas of impact after completing the technical review.

[10/2020 Technical team has begun analysis and cleanup of K1, K2, K3 address types. 11 database views and packages were identified that use these addresses. Six have been confirmed to be defunct, and

dropped from the database. Two are confirmed in use (loaded via the admissions feed – this is expected) and need to be remediated. The other three are still under investigation. The application and reporting impacts are still under consideration]

Lead: Kate Hathaway, John Ferraiuolo, & Tim Hinckley, ITS

5) Consider Name Changes/Repurposing

Some address types should be repurposed or renamed to align with desired use.

- AT – Out of Area Address [6/2020: STVATYP Description updated to 'Academic Travel' per recommendations]
 - This address type is used exclusively by Yale Health. Students must have an 'AT' address in order to opt into Yale Health Plan's travel rider while on approved academic travel. Renaming this address type would bring the data dictionary into alignment with the current departmental practice of calling this address type "Academic Travel".
 - **Current name:** Out of Area Address
 - **Proposed name:** Address – Academic Travel
 - **Definition:** The address for G&P students while on approved academic travel.
- CM – Campus Address [10/2020: Because the UO address is now available for all students, it was determined that CM and UO would be redundant address types and this proposal was decided against. G&P students can use 'UO' address type to record their physical residence location. If they cannot receive mail at that address, they can enter an 'MA' address to identify their mailing address.]
 - CM is not currently being used by student systems. However, this type could be repurposed to serve as the local, physical address for a G&P student who cannot receive mail at their on-campus dorm room.
 - **Current name:** Campus Address
 - **Proposed name:** Address – Campus
 - **Definition:** The physical address for a G&P student living on campus.
- MA – Mailing [10/2020: Mailing address has been repurposed for use by all students.]
 - The committee recommends repurposing this address type for use by all students.
 - **Current name:** Mailing
 - **Proposed name:** Address – Mailing
 - **Purpose:** The mailing address for a student.
- UO – Undergraduate Off Campus [6/2020: STVATYP Description updated to 'Local' per recommendations and is available to all students]
 - The committee recommends repurposing this address type for use by all students.
 - **Current name:** Undergraduate Off Campus
 - **Proposed name:** Address - Local
 - **Definition:** The local address for a student.

Implementation Considerations

Updating the description in Banner is a low-impact recommendation from a technical perspective.

Lead: Functional: Shonna Marshall, University Registrar’s Office; Technical: Kate Hathaway, ITS

6) Reevaluate Practice around High School Addresses

Currently, grades for high school students taking courses at Yale are mailed to the student’s high school guidance counselor. The first line of the HS address is used to determine which high school should receive the student’s grades. The committee recommends reevaluating this method of matching a student to the corresponding high school. The committee also recommends adding an end date to the high school address.

Implementation Considerations

The University Registrar’s Office will need to evaluate implementation considerations from a functional perspective. If HS addresses are pushed to Banner from an admissions application, a “To” date will need to be added to the data mapping.

Lead: Shonna Marshall, University Registrar’s Office

7) Enforce an End Date

When an address is intended to serve as a temporary address for a designated window of time, an end date should be enforced. Following this practice will enhance data quality in Banner and will ensure temporary addresses do not conflict with other address types for matriculated Yale students.

- AT – Out of Area Address [Update 10/2020: Students are now required to insert an end date for their AT address when submitting a request for in absentia status via the paperless form]
 - Require an end date when inserting an AT address.
- HA – Summer Programs Address
 - Insert an end date when the HA address is pushed from the Summer Session Slate application.
- HS – High Sch of YC High Sch Student
 - Insert an end date when the HS address is pushed from the admissions application.

Implementation Considerations

While technically possible, custom code would be required to mandate end dates in Banner 9 admin pages by address type. However, if an address type is always inserted from an admissions push (as in the case of an ‘HA’ address), end dates could be added to the data mapping.

Lead: Functional: Shonna Marshall, URO; Technical: Tim Hinckley, ITS

8) Publish a Data Dictionary

Publish and maintain a data dictionary for all active address types. Please see Appendix A for proposed data definitions.

Note that some address types were not targeted for inactivation or repurposing. The following addresses continue to serve the necessary and intended purpose and will remain unchanged; however, publicly accessible definitions will ensure ongoing clarity around the use cases for each address type:

- CK – Refund to an Organization
- DP – Diploma Address
- NU – OISS Foreign Address

- RL – OISS U.S. Address

Implementation Considerations

The data dictionary will be hosted on the reports.sis.yale.edu website; however, the dictionary format is still under review.

Lead: Kate Hathaway, ITS

9) Build Consistency in Admissions Data Push Across Schools

Currently, each school may select up to three addresses they wish to push from their application to Banner; however, they are not required to select any particular ATYP code. As a result, current practice varies widely across the schools. One address should correspond to the mandated address type for all students.

Implementation Considerations

Building consistency across schools would require a technical review. Once the three address types were chosen, data fields would need to be remapped. A review of the Slate to Banner admissions push is currently underway; this recommendation around addresses can be incorporated into the existing project examining admissions and test score data.

Lead: John Ferraiuolo, ITS

Impacted Offices

In drafting these recommendations, delegates from the Data Governance Steering Committee consulted with representatives from offices across campus that consume student addresses including:

- Admissions
- Financial Aid
- IT
- Office of the Secretary
- OISS
- Public Safety
- Student Accounts
- Summer Session
- Study Abroad
- Yale Alumni Association
- Yale Health
- University Registrar's Office

Impacted Systems

Due to the impact on downstream systems, implementing the committee's recommendations will require input and involvement from both technical staff and functional owners. Impacted systems include:

- Banner Admin Forms
- Banner Self-Service

- Epic (Yale Health)
- Financial Aid
- Hopper
- OCS
- PeopleHub
- SEVIS

Conclusion

Many of the current practices around student addresses contribute to business process challenges and added complexity across multiple applications. In recommending significant changes to the university's policies and procedures, the committee anticipates a higher level of data quality and simplified data entry and reporting. It hopes to bring users across campus toward a shared understanding of key address types, how they are used by various constituents and in different contexts, and how to distinguish related fields for appropriate use in reporting and analysis.