Entity Descriptions and Constraints

account

Description

An account record describes the originator of an expense record.

For information about FRS's accounts, see:
See http://www.ais.unc.edu/busman/act/actpol2.html

For information about FRS's account code structure, see:
http://www.ais.unc.edu/busman/act/actpol3.html

UNC has currently reserved 120 accounts for MEASURE Phase II, from 5-35500 to 5-35619. Expenses that originate at UNC are charged to account 5-35501. Accounts are primarily used by UNC to capture overhead charges. UNC levies a 46% overhead "tax" on most expenses that are charged to 5-35501 (some object codes are exempt from overhead). All other accounts are classified as "subcontracts," which means that UNC only levies the overhead rate of 46% against the first $25,000 of expenses charged to those accounts.

Constraints

An account relates to zero, one, or more expenses. Accounts with zero expenses are not yet activated.

An account relates to zero or one activity. In most cases, minor subcontract accounts (those greater than 5-35505) have a default activity to which every expense charged to that account will be automatically allocated.

An account relates to zero, one, or more fund_allocations.

Questions

Are there accounts carried over from Phase I that won't be charged overhead at all?

activity

Description

The activity is the functional center of the Measure universe. Each activity represents a sub-project of Measure, defined in the annual workplan to USAID, or defined by the project administration for the purpose of tracking administrative costs. Activities form the bridge between expenses and funds (revenue) so that project administrators can determine on both an activity by activity and aggregate basis, how much of a given USAID fund has been expended—something UNC's FRS system is not able to track.

Constraints

An activity relates to zero, one, or more effort_allocations.

An activity related to zero, one, or more expense_allocations.

An activity relates to zero, one, or more fund_allocations.

An activity relates to zero, one, or more accounts.

effort

Description

The concept of "effort" is used to capture a period of time over which an employee of Measure worked on one or more activities. A Measure employee who only ever contributes to a single activity (such as certain members of the project's administration) would only have a single effort record with a start_date and end_date that encompasses the entire span of time they've worked for Phase II. A Measure employee who works on one or more different activities every month would have many effort records, each of which with a start_date and end_date that encompasses only a single month.

Constraints

An effort relates to one person.

An effort relates to one or more effort_allocations. An effort may be related to zero effort_allocations immediately after the effort record is created. The workflow for creating a new effort necessarily includes creating the effort's related effort_allocation(s). For planning purposes, it is conceivable that standard efforts could be set up in advance before their related effort_allocations are created, but that is not presently the case.

effort_allocation

Description

The effort allocation captures the percent that an employee's effort should be allocated to a specific activity. An employee's effort (for a single month or more) may encompass many salary and benefits expenses, all of which must be allocated to the same activity or activities. Therefore, whenever an effort_allocation is created or updated, expense_allocations must be created or updated for all the applicable personnel expenses.

Constraints

An effort_allocation relates to one effort.

An effort_allocation relates to one activity.

expense

Description

An expense is a record which tracks UNC giving someone money. Examples of expenses include a monthly salary, a travel advance, an office supply purchase, etc. An expense can be negative, such as when a purchase is refunded or an accounting error is corrected. UNC's Financial Records System (FRS) tracks expenses by account and object.

All of Measure's expense records will be imported on a nightly basis directly from AIS's Departmental Accounting System (DAS). In the future CPC may import expense records

for the entire center, at which point Measure would begin importing records from CPC's accounting system.

Constraints

An expense relates to one object.

An expense relates to one account.

An expense relates to zero, one, or more expense_allocations. As some expense_allocation records must be created manually, expenses without any related expense_allocations may exist in the system for a short time. The financial officer should be alerted to the existence of unallocated expenses on at least a monthly basis.

An expense relates to zero or one person. Algorithmically deciphering the person to which a personnel expense (almost every expense with an object code below 1900) should relate from the variable plaintext supplied by AIS may require human intervention in order to determine whether a new person record should be created. State Protection Act (SPA) employees have a position number that shows up in DAS's first reference field, which should be used to help uniquely identify the Measure employee.

expense_allocation

Description

An expense_allocation captures the relationship between an expense and an activity. As an expense may be divided among one or more activities, an expense_allocation requires the percentage (or amount) which the expenses is to be allocated to each activity. If an amount has been specified, the percent can be left blank. If a percent has been specified, the database should automatically calculate and store the amount. If the percent or the expense_amount ever changes, the expense_allocation_amount must be immediately recalculated.

Constraints

An expense_allocation relates to one expense.

An expense_allocation relates to one activity.

An expense_allocation relates to one or more transactions. An expense_allocation may momentarily exist without related transaction(s), but the purpose of the Phase II financial system is to relate expense_allocations to fund_allocations in real time. If an expense_allocation does not match an appropriate fund_allocation, the database should create an initial fund_allocation. See the transaction entity for more information.

fund

Description

A fund represents an abstraction of the USAID obligations for budgeting purposes. Within a given project year, a fund serves to aggregate all BW, BM, and Allocable obligation_partitions. fund records are generated automatically by the database.

Constraints

A fund relates to one obligation_intent.

A fund relates to one or more obligation_partitions.

A fund relates to zero, one, or more fund_allocations.

fund_allocation

Description

Similar to the effort_allocation and expense_allocation entities, the fund_allocation entity tracks the allocation of funds to activities. A fund_allocation can be thought of as an individual budget item for an activity. In Phase II, the fund_allocation is also allocated to a specific account. The fund_allocation_amount should never be negative.

Constraints

A fund_allocation relates to one fund.

A fund_allocation relates to one activity.

A fund_allocation relates to one account.

A fund_allocation relates to zero, one, or more transactions.

Questions

Since fund records are automatically generated based on obligation record updates, what should happen to a fund allocation and a fund if the obligation is changed such that that fund no longer exists? One possible solution: disallow changes to obligation records—allow validated deletion only—except for the amount or the notes fields.

object

Description

An object record categorizes an expense record, and determines whether UNC can charge overhead on a given expense. All object records come from a list published by UNC: http://www.ais.unc.edu/busman/act/actapp2.html

Constraints

An object relates to zero, one, or more expenses.

objective

Description

USAID defines its funding in terms of several numbered strategic objectives, including population, maternal health, child health, HIV/AIDS, and infectious disease.

Constraints

An objective relates to zero, one, or more obligations.

obligation

Description

An obligation is a fancy word for "a pot of money with an intended purpose." By obligating a pot of money to Measure, USAID is contractually obligated to provide the project with that money, and Measure is contractually obligated to perform certain services related to that pot of money.

Measure's cooperative agreement with USAID is modified periodically to redefine Measure's funding obligations. A typical "modification" includes multiple obligations, each differentiated by a strategic objective and a regional source. Funds that originate from USAID/Washington are known as "Core" while funds originating from USAID regional and country missions come in two flavors, "Field Support" and "MAARDs" (special, off-cycle funding).

In Phase II, certain chunks of the USAID/Washington funding will be earmarked to cover what USAID refers to as Basic Management Costs (BMCs). Other chunks will be earmarked to cover the cost of what USAID refers to as Bureau-Wide (BW) activities. Any obligation not marked as BM or BW is consider a Directed (DR) fund, and will be charged an annually agreed-upon allocable (AL) percentage (5% in year 1) to cover any administrative costs that fall outside of USAID's BMCs. For budgeting simplicity, BW, BM, and AL funds will be aggregated into one "fund" for a given project year. It is necessary then that the database expend the individual components of these "funds" evenly.

Constraints

An obligation relates to one region.

An obligation relates to one objective.

An obligation relates to one project_year.

An obligation relates to one intent. An obligation cannot relate to the "Allocable" intent.

An obligation relates to zero, one, or more obligation_partitions.

Questions

Should modification_number and project_year_id be made into a modification (this would be more normalized, but might complicated data entry)?

obligation_intent

Description

An obligation_intent describes whether a obligation is directed, bureau-wide, basic-management, or allocable.

Constraints

An obligation_intent relates to zero, one, or more obligations.

An obligation_intent relates to zero, one, or more funds.

obligation_partition

Description
An obligation_partition captures the relationship between an obligation and a fund, allowing directed obligations to be taxed by the annual allocable rate, and allowing the BW and BM obligations and the Allocable partitions to be aggregated for budgeting simplicity. obligation_partition records will be generated by the database automatically according to the annual allocable rate. In addition, the obligation_partitions will record how much of a given obligation_partition has been expended, based on the constraint that the component parts of BW, BM, and Allocable funds must be expended evenly.

Constraints
An obligation_partition relates to one obligation.

An obligation_partition relates to one fund.

person

Description
The person entity, which has functions beyond the financial system, tracks information about every person who is paid a salary or benefit by Measure.

Constraints
A person record relates to zero, one, or more expenses.

A person record relates to zero, one, or more efforts.

project_year

Description
The project_year is different from the calendar year, beginning on October 1 and ending on September 30. This entity connects the relative Y1, Y2, Y3 notation with actual start and end dates.

Constraints
A project_year relates to zero, one, or more obligations.

region

Description
All USAID funding originates from either USAID/Washington (United States) or a from a regional or country mission. The region entity includes all countries currently recognized by the ISO, including Kosovo and West Bank/Gaza, the regions that correspond to USAID's regional missions, and a "Global" designation.

Constraints
A region relates to one region_type.

A region relates to zero, one, or more obligations.

region_type

Description

The region_type defines whether a region is a USAID bureau, a region, or a country.

Constraints

A region_types relates to zero, one, or more regions.

transaction

Description

The transaction entity is new in Phase II, algorithmically relating allocated expenses with allocated funds for the purpose of determining how much of a given fund has been expended. An expense_allocation can be "charged to" a fund_allocation (in the form of the transaction linking relationship) if they both relate to the same activity and account. A fund_allocation which does not match any expense_allocation in this sense will not be related to any transaction records. An expense_allocation which has no matching fund_allocation should automatically trigger the creation of a fund_allocation with an amount of zero, related to the allocable fund for that year. Negative expense allocations will be applied to the current fund_allocation (in the transaction generation process) regardless of whether the negative expense causes the calculation of fund_allocation expended to surpass fund_allocation_amount. The fund_allocation_amount should never be negative.

Constraints

A transaction relates to one fund_allocation.

A transaction relates to one expense_allocation.