

Measure Evaluation Phase II Financial Information System Entity Descriptions

account

Description

“An account is the basic building block of the Financial Records System (FRS).”

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. Measure’s major subcontractors each have accounts to which they invoice their expenses on a monthly basis. 5-35502 is JSI, 5-35503 is Macro, 5-35504 is Tulane, 5-35505 is The Futures Group. Accounts greater than 5-35505 are considered minor subaccounts which are created to support contractors as needed.

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 expenses tagged to certain 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.

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

Relationships and 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.

Data Dictionary

Field Name	Description	Type	Constraints
account_id	primary key	INT(11)	
account_code	account code assigned by UNC	VARCHAR(6)	unique, >=535501, <=535619
account_short_name	abbreviated version or acronym of account_name	VARCHAR(10)	
account_name	name/description of the subcontractor	VARCHAR(255)	

activity_id	foreign key, activity to which all expenses related to this account should be allocated	INT(11)	optional
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activity

Description

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

Relationships and Constraints

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

An activity relates 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.

Data Dictionary

Field Name	Description	Type	Constraints
activity_id	primary key	INT(11)	
region_id	foreign key, specifies the primary country benefited, first part of canonical "activity code"	INT(11)	unique
activity_number	sequentially assigned for activity related to a given region_id, second part of "activity code"	INT(11)	
activity_name	official name of the activity	VARCHAR(255)	
activity_notes	notes (more fields will be added to this table for non-fiscal purposes)	TEXT	

allotment

Description

The allotment entity is new in Phase II, its records being algorithmically generated to relate fund_allocations with obligations.

Relationships and Constraints

An allotment relates to one fund_allocation.

An allotment relates to one obligation.

Data Dictionary

Field Name	Description	Type	Constraints
fund_allocation_id	foreign key	INT(11)	unique
obligation_id	foreign key	INT(11)	
allotment_amount	amount of obligation allotted to fund_allocation	DOUBLE	

effort

Description

The concept of "effort" is used to capture a period of time over which an employee of Measure works on one or more activities. An employee who only 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 have 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.

Relationships and Constraints

An effort relates to one person.

An effort relates to one or more effort_allocations.

Data Dictionary

Field Name	Description	Type	Constraints
effort_id	primary key	INT(11)	
effort_start_date	beginning of effort	DATE	must fall on first day of month
effort_end_date	end of effort	DATE	must fall on last day of month
person_id	foreign key	INT(11)	

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.

Whenever an effort_allocation is created or updated, expense_allocations must be created or updated for all the applicable personnel expenses within that effort.

Relationships and Constraints

An effort_allocation relates to one effort.

An effort_allocation relates to one activity.

Data Dictionary

Field Name	Description	Type	Constraints
effort_allocation_id	primary key	INT(11)	
effort_allocation_percent	percent of effort allocated to activity	UNSIGNED DOUBLE	all effort_allocation_percents for a given effort must sum to 100%
effort_id	foreign key	INT(11)	unique
activity_id	foreign key	INT(11)	unique

expense

Description

An expense is a discrete record of money flowing through UNC's accounting system. An expense could be 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.

Relationships and 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. Most every personnel expense record should come from DAS with a UNC PID, which is a unique seven digit number assigned to all UNC staff. This number, also tracked in the person table, will allow the database to relate personnel expenses with persons. Some personnel expenses (such as for temporary employees) may not have a UNC PID, thus human intervention would be required to create the relationship which may require creating a new person record.

Data Dictionary

Field Name	Description	Type	Constraints
expense_id	primary key	INT(11)	
expense_das_id	primary key from DAS (trans_key)	INT(11) ???	unique
expense_description	description of expense, from DAS	VARCHAR(100)	
expense_payee	this may not have a purpose	VARCHAR(100)	
expense_reference_1	expense reference code, from DAS	VARCHAR(7)	
expense_reference_2	expense reference code, from DAS	VARCHAR(7)	
expense_encumbered_date	do we need a reconciled date?	DATE	
expense_amount	expense amount	SIGNED DOUBLE	
account_id	foreign key	INT(11)	
object_id	foreign key	INT(11)	
person_id	foreign key	INT(11)	

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 expense is to be allocated to an 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.

expense_allocation records will be automatically generated for expenses related to accounts with a default activity. expense_allocations will be automatically generated for personnel expenses based on the effort and effort allocation records. Automatically generated expense_allocation records should never be modified by end users.

expense_allocation records must be manually created for expenses that hit the major accounts (UNC, JSI, Macro, Tulane, TFGI) and for any minor account that does not have a default activity.

When an expense_allocation record is updated or created (whether automatically or manually) the database should automatically regenerate transaction records for all expense allocations that relate to the same account and activity from the expense_date onward.

Relationships and Constraints

An expense_allocation relates to one expense.

An expense_allocation relates to one activity.

Data Dictionary

Field Name	Description	Type	Constraints
expense_allocation_id	primary key	INT(11)	
expense_allocation_percent	percent of expense allocated to activity	UNSIGNED DOUBLE	optional if amount is specified
expense_allocation_amount	amount of expense allocated to activity	SIGNED DOUBLE	must be calculated if percent is specified (or expense_amount is updated)
expense_id	foreign key	INT(11)	unique
activity_id	foreign key	INT(11)	

fund

Description

The fund entity represents the set of all possible USAID funds (plus Measure's special Allocable fund). A fund record is created for the purpose of describing an obligation or a fund_allocation. The fund entity makes it possible for fund_allocations to be created that do not have matching obligations (in otherwords, a budget projection).

A fund without a single related fund_allocation or obligation record should be deleted.

Relationships and Constraints

A fund relates to one project_year.

A fund relates to one fund_type. If a fund is “Core Directed”, “Core Bureau-wide”, or “Core Management”, the region must be “United States”. If a fund is “Field Support” or “MAARD”, the region cannot be “United States”. If a fund is “Allocable”, the objective and region must be set to zero.

A fund relates to zero or one objective. If the fund_type is not “Allocable”, then an objective is mandatory.

A fund relates to zero or one region. If the fund_type is not “Allocable”, then a region is mandatory.

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

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

A fund relates to (one or more obligations) or (one or more fund_allocations).

Data Dictionary

Field Name	Description	Type	Constraints
fund_id	primary key	INT(11)	
project_year_id	foreign key	INT(11)	unique, objective_id and region_id optional for fund type of "Allocable"
fund_type_id	foreign key	INT(11)	
objective_id	foreign key	INT(11)	
region_id	foreign key	INT(11)	

fund_allocation

Description

A synonym for fund_allocation would be budget_item. The fund_allocation record specifies the fund, the amount, and the order that a fund_allocation (backed by allotment(s) of obligation) should be expended by an activity's expense_allocations. New in Phase II, the fund_allocation also segregates an activity's funding by account. The fund_allocation_amount should be greater than zero.

fund_allocations operate independently of obligations, allowing budget projections to be made based on the assumed receipt of an obligation. This also means that if an fund_allocation is entered which is based on an erroneous obligation, and that obligation is updated, the fund_allocation must be manually corrected. Of course a fund_allocation with no supporting obligations should be indicated as such to allow detection of similar errors.

Relationships and 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 allotments.

Data Dictionary

Field Name	Description	Type	Constraints
fund_allocation_id	primary key	INT(11)	
fund_allocation_amount	amount of fund allocated to a given activity and account	SIGNED DOUBLE	
fund_allocation_order	order in which fund_allocations are to be expended	UNSIGNED INT	
activity_id	foreign key	INT(11)	unique
account_id	foreign key	INT(11)	unique
fund_id	foreign key	INT(11)	unique

fund_type

Description

A fund type describes the fund according to USAID reporting categories. In Phase I, all funds were either Core (meaning they came from USAID/Washington), Field Support (meaning they came from a regional or country USAID missions), or MAARD (a special type of off-cycle funding also from regional and country missions). In Phase II, Core funding is coming in three flavors, Core Directed (Core funding earmarked for specific activities), Core Bureau-wide (Core funding earmarked for specific bureau-wide activities), and Core Management (Core funding earmarked for Measure's project management activities). As the Core Management fund may not sufficiently cover the project's administrative overhead, the sixth fund type is "Allocable" with is levied against every incoming obligation (not tagged at Bureau-wide or Management) according to a percent agreed upon each year.

Relationships and Constraints

A fund_type relates to zero, one, or more funds.

Data Dictionary

Field Name	Description	Type	Constraints
fund_type_id	primary key	INT(11)	
fund_type_code	two character code	CHAR(2)	unique
fund_type_name	name of fund type	VARCHAR(100)	

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>

Relationships and Constraints

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

Data Dictionary

Field Name	Description	Type	Constraints
object_id	primary key	INT(11)	
object_code	code assigned by UNC	CHAR(4)	unique
object_name	descriptive text about object	VARCHAR(100)	

objective

Description

USAID defines its funding in terms of several numbered strategic objectives, including population (SO1), maternal health (SO2), child health (SO3), HIV/AIDS (SO4), and infectious diseases (SO5).

Relationships and Constraints

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

Data Dictionary

Field Name	Description	Type	Constraints
objective_id	primary key	INT(11)	
objective_code	code assigned by USAID	CHAR(3)	unique
objective_name	descriptive text about strategic objective	VARCHAR(100)	

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 fund type, strategic objective and a regional source. Funds that originate from USAID/Washington come in three flavors, known as “Core Directed”, “Core Bureau-wide”, and “Core Management”. Funds originating from USAID regional and country missions come in two flavors, “Field Support” and “MAARDs”. Obligations that are classified as “Core Directed”, “Field Support”, or “MAARD” are levied an overhead charge based on a percent determined each year (5% in project year 1). The obligations derived from this “tax” constitute a sixth type of funding, known as “Allocable” which is used to offset the cost of project administration not covered by “Core Management” funding.

Relationships and Constraints

An obligation relates to one fund.

An obligation relates to zero or one obligation (the allocable child record).

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

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

Data Dictionary

Field Name	Description	Type	Constraints
obligation_id	primary key	INT(11)	
obligation_amount	amount of obligation	UNSIGNED DOUBLE	>0, <100,000,000
obligation_modification_number	assigned by USAID, groups obligations	UNSIGNED INT	>=0, <=99
obligation_notes	descriptive text about obligation	VARCHAR(255)	
allocable_obligation_id	self-join foreign key relating to allocable child		optional
fund_id	foreign key	INT(11)	

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.

Relationships and Constraints

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

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

Data Dictionary

Field Name	Description	Type	Constraints
person_id	primary key	INT(11)	
person_first_name	first name of person	VARCHAR(50)	
person_last_name	last name of person	VARCHAR(30)	
person_middle_name	middle name of person	VARCHAR(100)	optional
person_unc_pid	PIDs assigned by UNC to staff (more fields will be added to this table for non-fiscal purposes)	VARCHAR(9)	optional

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. Each project year also has an allocable_percent used to determine the allocable tax applied to obligations for that year.

Relationships and Constraints

A project_year relates to zero, one, or more funds.

Data Dictionary

Field Name	Description	Type	Constraints
project_year_id	primary key	INT(11)	
project_year_code	short code describing year	CHAR(2)	unique
project_year_start_date	date marking start of project year (begins Oct 1)	DATE	
project_year_end_date	date marking end of project year (ends Sep 30)	DATE	

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.

Relationships and Constraints

A region relates to one region_type.

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

Data Dictionary

Field Name	Description	Type	Constraints
region_id	primary key	INT(11)	
region_code	2 digit ISO county code or 3 digit Measure region code	CHAR(3)	unique
region_name	name of country or region	VARCHAR(255)	unique
region_type_id	foreign key	INT(11)	
region_parent_id	foreign key (self-join)	INT(11)	

region_type

Description

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

Relationships and Constraints

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

Data Dictionary

Field Name	Description	Type	Constraints
region_type_id	primary key	INT(11)	
region_type_name	name of region types (global, bureau, subregion, country)	VARCHAR(100)	

transaction

Description

The transaction entity is new in Phase II, algorithmically generated to relate expenses with obligations for the purpose of determining how much of a given obligation has been expended.

The logic for generating the transaction records will be triggered by changes made to the expense_allocations (which are triggered by changes made to the effort allocation and expense entities) as well as changes made to the fund_allocation, allotment, and obligation entities.

The fund_allocation_amount should never be negative.

Relationships and Constraints

A transaction relates to one fund_allocation.

A transaction relates to one expense_allocation.

Questions

What to do about expenses without expense_allocations?

What to do about activity and accounts without fund_allocations?

How to treat negative expenses?

Data Dictionary

Field Name	Description	Type	Constraints
expense_allocation_id	foreign key	INT(11)	unique
fund_allocation_id	foreign key	INT(11)	
transaction_amount	amount of expense being applied to a fund	SIGNED DOUBLE	