

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. 5-35500 is used for internal purposes and does not incur expenses. 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 John Snow, Inc.

5-35503 is ORC Macro, Inc.

5-35504 is Tulane University

5-35505 is The Futures Group International

Accounts greater than 5-35505 are activated upon the signing of a contract between Measure and a subcontractor. In most cases these accounts are created to support a single activity, which means that all expenses that hit a given account greater than 5-35505 can be automatically allocated to a specified activity.

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 related to certain objects 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 presumed to be not yet activated.

An account relates to zero or one activity. In most cases, accounts 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

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	

commitment

Description

The commitment entity (new in Phase II), is generated automatically to relate fund_allocations with obligations based on the criteria that both relate to the same fund and project_year. If a given fund_allocation has no “related” obligation (or vice versa), no commitment rows will be generated.

The sum of the commitment_amount for all commitment rows of a given fund_allocation should always equal the fund_allocation_amount. If a series of fund_allocations have overcommitted an obligation (or obligations), the commitment_available_amount field will keep track of how much of an obligation is actually available to support the fund_allocation. Assuming an obligation has not been overcommitted, the commitment_amount and commitment_available_amount will be equal.

Relationships and Constraints

A commitment relates to one fund_allocation.

A commitment 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)	
commitment_amount	amount of obligation committed to fund_allocation	DOUBLE	
commitment_available_amount	amount of obligation actually committed to fund_allocation	DOUBLE	

earmark

Description

The earmark entity allows for the flexible tagging of funds according to fluctuating reporting demands from USAID without having to redesign the fund, fund_type, and objective entities. At present, 5 earmarks exist, 2 that modify the Core fund_type (Bureau-wide and Management) and 2 that modify the SO4 objective (PAI 1.5, PAI 2.0, and PAI 2.5).

Relationships and Constraints

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

Data Dictionary

Field Name	Description	Type	Constraints
earmark_id	primary key	INT(11)	
earmark_code	code of earmark	VARCHAR(25)	
earmark_name	name of earmark	VARCHAR(100)	

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 that 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. Examples of expenses include monthly salaries, travel advances, office supply purchases, 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 (such as temporary employees) may not have a UNC PID, thus human intervention would be required to relate their personnel expenses with their person record (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_reference	expense reference code, from DAS	VARCHAR(7)	optional
expense_date	do we need a reconciled date?	DATE	
expense_amount	expense amount	SIGNED DOUBLE	
expense_notes	description manually entered by Measure	VARCHAR(255)	optional
account_id	foreign key	INT(11)	
object_id	foreign key	INT(11)	
person_id	foreign key	INT(11)	optional

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.

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

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 US AID 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 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. An objective is mandatory for all fund_types except “Allocable”,

A fund relates to zero or one region. A region is mandatory for a fund_type of “Field Support” or “MAARD”.

A fund relates to zero or one earmark. An earmark of “Bureau-wide” or “Management” can only cooccur with a fund_type of “Core”. An earmark or “PAI 1.5”, “PAI 2.0”, “PAI 2.5” can only cooccur with an objective of “SO4”.

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)	
fund_type_id	foreign key	INT(11)	
objective_id	foreign key	INT(11)	
region_id	foreign key	INT(11)	
earmark_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 year, the amount, and the order that a fund_allocation (backed by commitments of obligations) should be expended by an activity's expense_allocations. 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 project_year.

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	UNSIGNED DOUBLE	>0
fund_allocation_order	order in which fund_allocations are to be expended	UNSIGNED INT	
activity_id	foreign key	INT(11)	
account_id	foreign key	INT(11)	
project_year_id	foreign key	INT(11)	
fund_id	foreign key	INT(11)	

fund_type

Description

A fund type describes the fund according to USAID's macro reporting categories. All funds are either Core (meaning they come from USAID/Washington), Field Support (meaning they come from a regional or country USAID missions), or MAARD (a special type of off-cycle funding also from regional and country missions).

A fund of fund_type Core can be optionally modified by the earmarks "Bureau-wide" (intended for specific bureau-wide activities) and "Management" (intended to fund Measure's management costs).

As the Core Management funds may not sufficiently cover the project's administrative overhead, there is a fourth fund_type known as "Allocable" with is levied against every incoming obligation (not earmarked at Bureau-wide or Management) according to a percent agreed upon each year (5% in project_year 1).

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 numbered strategic objectives, five of which are important to Measure:

- SO1 Population
- SO2 Maternal Health
- SO3 Child Health
- SO4 HIV/AIDS
- SO5 Infectious diseases

A fund of objective SO4 can be optionally modified by the earmarks “PAI 1.5”, “PAI 2.0”, or PAI 2.5”.

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.

Obligations not earmarked as “Bureau-wide” or “Management” are levied an overhead charge known as “Allocable” based on a percent determined each year (5% in project_year 1).

Relationships and Constraints

An obligation relates to one fund.

An obligation relates to one project_year.

An obligation relates to zero or one obligation (the optional 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)	
project_year_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 overhead applied to obligations for that year.

Relationships and Constraints

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

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

Data Dictionary

Field Name	Description	Type	Constraints
project_year_id	primary key	INT(11)	
project_year_code	short code (Y1, Y2...)	CHAR(2)	unique
project_year_name	description of project year's start/end dates	CHAR(100)	
project_year_start_date	date project year starts (Oct 1...)	DATE	
project_year_end_date	date project year ends (Sep 30...)	DATE	
project_year_allocable_percent	percent that applicable obligations should be levied allocable	DOUBLE	

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 expense_allocations 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, commitment, and obligation entities.

Relationships and Constraints

A transaction relates to one obligation.

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	