

**Requirements  
Specification  
For CIFM to STAR  
Data Feed**

*McBride & Associates  
11400 Commerce Park Drive  
Reston, VA 20191*

*Date Created: 8/23/00  
Date Finalized: 10/13/00  
Version 2.0*

# 1. Introduction

## 1.1 *Purpose of Document*

This document is considered the second part of the interface requirements for movement of data between STAR and CIFM. The first part of the requirements is the interface allowing data to move from STAR to the CIFM/STAR Bridge. These requirements are fully specified in the document Requirements Specification for STAR Data Feed dated 4/14/00. This document specifies the requirements for the data interface allowing data from CIFM to move to STAR.

## 1.2 *Overview*

The purpose of the CIFM/STAR Bridge is to facilitate the interchange of data between the STAR and CIFM systems. For the purpose of this effort, each of these systems is considered the source system for specific types of data. The STAR system is the source for catalog data that will be loaded into lookup tables in the CIFM system, and for building level detail data. The CIFM system is the source system, and in fact, the PBS system of record for *validated* spatial data, i.e. square footage of a particular space that has been through the spatial data validation process.

In order for the CIFM/STAR Bridge to meet its primary purpose, it is necessary to have data available from the STAR system. The data necessary and the requirements surrounding the data feed are detailed in the document Requirements Specification for STAR Data Feed dated 4/14/00.

Since the CIFM System is the system of record for *validated* spatial data, this information needs to be fed into the STAR system to be available for accurate billing. The data necessary and the requirements surrounding this data feed are detailed in this document.

The CIFM System will send the validated spatial data and identifying data elements to STAR. The details of how this transfer will occur need to be determined in the design phase. This document does not attempt to discuss the location to which the STAR system will receive the data; the format in which it will be received; the applications that will be used to facilitate the communication or any other aspect which requires joint discussion and design consensus between McBride and the SDC.

## 1.3 Scope

### 1.3.1 Identification

**STAR.** STAR is a facility billing system, in addition to performing other functions. STAR receives its data from both a user interface and through batch processes (monthly loads from external systems). It is operated on a Sybase platform with a central, national database and multiple client workstations. Data is segmented into regions by a region code. STAR is the source for the catalog and building detail data. As it computes billing information for PBS, it will require validated spatial data from the CIFM system in order to accurately calculate the bills.

**CIFM/STAR Bridge.** This is an application and hardware system that performs the middleware functionality for the CIFM system. Its purpose, as it relates to this effort, is to receive data originating from STAR and CIFM, compare the spatial information and translate it into the form and definitions required for the STAR system. In addition, it can also serve as the communication platform for linking the CIFM system with other external systems.

Initially, the CIFM/STAR Bridge was designed to run on an Oracle 8i platform utilizing Sybase DirectConnect, Oracle Gateway for Sybase, and Oracle Replication Server performing the communication link between the CIFM database and the SYBASE database. This was based on the possibility of working directly with the STAR database. Other options are being investigated.

The CIFM/STAR Bridge table structures will be compatible with the STAR table structures. It is expected that with the communication link, STAR will be able to apply the same actions that occur within STAR to the Oracle version of the tables.

## 2. Requirements

### 2.1 Tables Required

There is one STAR table and one corresponding CIFM table that contains the data required for this effort. The table in STAR is the ***tblbgsp*** and in CIFM, it is the ***space*** table. These tables contain the space level detail data for each of the corresponding systems.

### 2.2 Elements Required

There are 6 data elements that are required to send spatial data from CIFM into STAR. The first element is the spatial data itself, which is the usable area, ***spuarea***, contained in the CIFM ***space*** table. The other five fields are

identifier fields, which are used to group the data such that the space information can be identified on a one-to-one basis between the two systems.

The following table provides more detailed information about the fields and their relationship:

Field	FIS SPACE Table Column Name	FIS Oracle Data Type and Size	STAR TBLDGSP Table Column name	STAR Sybase Data Type and Size	Data Translation Rule
Building id	bldgid	Varchar2(16)	c_loc	Char(9)	Truncate FIS data to max of nine characters.
Agency	sporg	Varchar2(16)	c_ab_code	Char(4)	Truncate FIS data to max of four characters.
Customer Billing Record (CBR)	spbill	Varchar2(16)	i_agmt	Char(9)	Truncate FIS data to max of nine characters.
Space Type	sptypeact	Varchar2(8)	c_spc_type	Char(3)	Truncate FIS data to max of three characters.
Occupancy Status	spstatoc	Varchar2(8)	c_spc_cat	Char(2)	Truncate FIS data to max of two characters.
Usable Area	spuarea	Num(11,2)	a_bldgspc_asgn_sf	Float	See Note.

**Note** – For the FIS SPACE table, perform a SUM on spuarea by grouping on the columns (bldgid, sporg, spbill, sptypeact, spstatoc). For the STAR tldgsp table, perform a SUM on a\_bldgspc\_asgn\_sf by grouping on the columns (c\_loc, c\_ab\_code, i\_agmt, c\_spc\_type, c\_spc\_cat). Match the cooresponding fields as described in the table above. FIS rolled up space usable area will replace the STAR a\_bldgspc\_asgn\_sf rolled up area.

## **2.3 STAR *tldgsp* table**

### **2.3.1 Type of interface**

This table will be pulled as part of the STAR to CIFM interface. Please refer to the Requirements Specification For STAR Data Feed document data 4/14/00 for more information

## **2.4 FIS Space table**

### **2.4.1 Type of Interface**

The STAR space table (*tldgsp*) is mentioned because it is used for comparison purposes, the actual data that will be sent back to STAR is contained in the *space* table in FIS. It is expected that this CIFM data will be sent to STAR in near real time as defined in section 2.4.1.1

#### **2.4.1.1 Timing of Transfers**

The following requirement is based on the assumption that the receiving system will not implement a constraint for timing on data receipt.

Additions, updates, or deletions that occur in the CIFM *space* table shall be passed to the CIFM/STAR Bridge within 2 minutes of occurrence. The data will then be passed to STAR within the following 5 minutes. 2.4.1.2 Communication Exception – see section 2.5

## **2.5 Database Connectivity Unavailable.**

2.5.1 If the Connection to STAR is unavailable, store and hold all CIFM transaction of type insert, update, and delete that has occurred on the CIFM **space** table and maintain the order in which the transactions occurred.

2.5.2 The Bridge shall continue trying to establish a connection indefinitely every 3 minutes.

2.5.3 Once connection has been established, The Bridge shall begin applying all transaction to STAR in the same order in which they occurred in the CIFM system.

## **3. Non-Functional Attributes**

### **3.1 Security**

Access to the CIFM/STAR Bridge will be granted by the CIFM/STAR Bridge administrator.

### **3.2 Reliability**

The transmission must be reliable such that if an add, update, or delete action fails from CIFM/STAR Bridge to STAR, the attempted action must be stored and retried by the CIFM/STAR Bridge staff. If repeated attempts fail, the CIFM/STAR Bridge staff will contact the identified STAR contact and Regional Contact. The process and procedure to follow in this case will be developed during the design and development phases.

### **3.3 STAR Structural Changes**

Any structural changes to the STAR space table (**tbl\_dgsp**) shall be coordinated with the CIFM group at least 14 days before the change occurs. This includes new column names, renamed column names, dropped column names, primary key changes, data type changes and constraint changes. In addition, changes in related tables that functionally or organizationally change how STAR looks at space, must be coordinated with the CIFM group with enough notice such that an impact analysis can be done and appropriate code changes can be designed, developed, tested, and implemented. Preferably, notice of any changes would be communicated when the change request is approved by the STAR Change Review Board.

## 4. Operational Scenarios

As drawings are entered and maintained in the CIFM system, the accurate square footage will be associated with the drawing. Due to the current project and billing lifecycle, it is expected that an estimate of the square footage will be entered into STAR. This is required for a project to be created/initiated in STAR. With that assumption, the following operational scenarios are expected.

- 4.1 **Entering new Spatial Data**

Once the spatial data has been entered into CIFM, this data needs to be transmitted back to STAR. The spatial data will be aggregated with like spaces whereas like spaces are defined as those with the same Building ID, Agency Bureau Code, CBR, Spacetype, and Occupancy Status. This aggregated value will be sent to STAR. In addition to that value, the identifying values will also be sent to STAR.
- 4.2 **Updating Spatial Data**

An update of the spatial data can occur in one of two ways. The first is when a remeasurement or error has occurred on the original entry of spatial data. In this case, the actual value of the usable square footage changes. This changed value would need to be sent back to STAR in its aggregated form. The second means of spatial data change occurs when one of the identifying field values changes. These scenarios are discussed in sections 4.3 - 4.7.
- 4.3 **Change in Agency Bureau Code**

When a space record is initially entered into CIFM, it may or may not have assignment tag data associated with it. Agency Bureau Code is considered an assignment tag value. If the Agency Bureau Code is added to a space or is changed, then the aggregated spatial record changes as well. If it is a change in Agency Bureau Code, then there are two aggregated spatial records affected, the one associated with the original Agency Bureau Code and the one associated with the new Agency Bureau Code. All affected aggregated spatial records would be sent to STAR.
- 4.4 **Change in CBR**

When a space record is initially entered into CIFM, it may or may not have assignment tag data associated with it. The CBR is considered an assignment tag value. If the CBR is added to a space or is changed, then the aggregated spatial record changes as well. If it is a change in CBR, then there are two aggregated spatial records affected, the one associated with the original CBR and the one associated with the new CBR. All affected aggregated spatial records would be sent to STAR.
- 4.5 **Change in Spacetype**

When a space record is initially entered into CIFM, it may or may not have assignment tag data associated with it. The spacetype is

considered an assignment tag value. If the spacetype is added to a space or is changed, then the aggregated spatial record changes as well. If it is a change in spacetype, then there are two aggregated spatial records affected, the one associated with the original spacetype and the one associated with the new spacetype. All affected aggregated spatial records would be sent to STAR.

4.6 Change in Occupancy Status

When a space record is initially entered into FIS, it may or may not have assignment tag data associated with it. The Occupancy Status is considered an assignment tag value. If the Occupancy Status is added to a space or is changed, then the aggregated spatial record changes as well. If it is a change in Occupancy Status then there are two aggregated spatial records affected, the one associated with the original Occupancy Status and the one associated with the new Occupancy Status. All affected aggregated spatial records would be sent to STAR.

4.7 Change in Building ID

It is unlikely that a Building ID would change. If, however, it does change, then the change would affect all of the aggregated spatial records associated with it and the new records would be sent to STAR.

## 5. Appendix

The following appendix is included to provide further information about the overall project.

**Appendix A:** A high-level view of the CIFM/STAR Bridge task

# Appendix A

This is a high-level view of the CIFM/STAR Bridge task

