

# JTLS-2018-13693 Add Individual Target JU Numbers

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## 1.0 Summary of Model Change Request

Currently the only way to assign a target a Joint Tactical Information Distribution System (JTIDS) Unit Number (JU) number is to give its owning or associated unit a block of JU numbers for targets. It is impossible to assign a specific target a specific JU number. This database capability should exist.

## 2.0 Design Summary

Within JTLS, a unit can be given a target to operate in one of two ways:

- The target can be defined as part of the unit's prototype definition. These targets are called Prototype Owned Targets (POTs). POTs do not exist in the database. They are created by the model when the unit is created during database initialization. Since these targets do not exist in the database, they cannot be assigned a JU number in the database; instead, the unit that will own the units is given a block of JU numbers. When the targets are created during database initialization, a JU number from the block is assigned to the Link-16 capable targets.
- A target can be specifically defined in the database. These targets are records within the database, but due to an oversight, the database builder cannot assign specific JU numbers to the Link-16 capable targets. If a target should have a JU number, the user must wait for the game to be initialized and via a Controller order set the target's JU number.

This design simply adds the ability to assign a non-POT target a JU number as part of the database build procedure.

## 3.0 Detailed Design

### 3.1 Basic Concept

The following types of targets can be specified as Link-16 capable:

- Surface-to-Air / Anti-Aircraft Artillery (SAM.AAA) targets
- Sensor targets

- Facility targets
- Surface-to-Surface (SSM) targets
- Communication targets

Each of these target tables will have a new attribute added.

**Table 1. New JU Number Table Changes**

TARGET TYPE	TARGET TABLE	NEW ATTRIBUTE NAME
SAM.AAA	sam_aaa_target	sam_ju_number
Sensors	sensor_site_target	ss_ju_number
Facility	facility_target	fat_ju_number
SSM	ssm_target	smt_ju_number
Communication	communication_target	cc_ju_number

.Each of these new attributes will have the following characteristics:

- Optional database parameter which means that NULL is allowed
- It will follow the currently defined JU number restrictions. It is a five-character text that represents an octal integer. In other words, only the digits 0 through 7 are allowed.

As part of the database conversion process, the attribute will simply be created and left blank.

### 3.2 Scenario Verification Program (SVP) Changes

#### 3.2.1 Link-16 Capability

The following Link16 Capable related checks will be implemented within the SVP

- If a target is given a JU Number in the database and the target sub-category is not Link-16 capable, a Warning should be generated.
- If a Sensor target is Link-16 capable and owned by a side that is told to use the Link-16 protocol, and no Link-16 source is available to the target, a Warning should be generated. One of the following statements must be true for the Sensor target to obtain a source JU number.
  - a. The target’s owning unit must have a specified JU Number (UT JU NUMBER)
  - b. The target’s associated unit must have a specified JU Number (UT JU NUMBER).

- c. The target's owning unit must have a JU Target Block specified.
- d. The sensor target must have a JU Number (TG JU NUMBER) specified.
- For Link-16 capable, non-sensor targets (i.e. SAM.AAA, Facility, SSM, and Communication Sites), owned by a Link-16 capable side should generate a Warning if the target has not been assigned a JU Number by one of the following methods:
  - a. The target's owning unit must have a JU Target Block specified.
  - b. The sensor target must have a JU Number (TG JU NUMBER) specified.

### 3.2.2 Link-16 Overlap Check

Currently the SVP checks that no database specified JU Numbers overlap. If there is any overlap, an Error is generated. This check needs to be reviewed to insure it works given that some targets will have individually specified JU numbers.

### 3.3 Model Changes

There are very few model changes required by this change. When the game is initialized, the target's JU number will be read and assigned. Once assigned, the model will work as it does now.

The only model change that is required is to insure that if a target is given a database JU number and its owning unit is also given a Target JU assignment block, it should be skipped when assigning JU numbers from the block. In other words, the JU assignment block number should not overwrite the database specified JU number for a target.

## 4.0 Data Changes

The following variables will be added to the database to support this design.

### TG JU.NUMBER

- Dimension: Variable
- Mode: Text
- Unit of Measure: NULL is allowed, but if specified the text string must be a 5 character text string representing an octal number.
- Range: 00000 to 77777
- Definition: The symbol that should be used to display an unidentified ship. The icon will be color-coded to represent the perceived side of the unidentified ship, but the symbol shape will be determined by the symbol assigned to this attribute.

- Relationships: This parameter is related to all other JU numbers and JU Track numbers specified in the database.

## 5.0 Order Changes

No order changes are required as a result of this design. There is already the ability to change a Target's JU Number using the SET TARGET ATTRIBUTE Order.

## 6.0 JODA Changes

No JODA Data System parameter, structure, or protocol changes are required to implement this design. A target's assigned JU number is already being passed to the JODA and used by the Link16 Message Service.

## 7.0 Test Plan

Text [*Describe the basic test objectives and procedures. This Test Plan section may be published as a separate document.*]

### 7.1 Test 1 Title

Purpose: [*Describe the specific feature, function, or behavior to be tested or measured.*]

Step 1: Text

Step 2: Text

**Expected Results:** [*Describe the specific model behavior to be observed.*]

**Expected Results:**