

CALIFORNIA’S DEFINITION FOR TITLE 21’S 32-BIT TRANSPONDER ID NUMBER FIELD

In the State of California, the 32-bit Transponder ID Number Field specified in the Title 21 standard has been further subdivided into three data fields to represent Tag Type, Facility Code, and Internal Tag ID. These fields are currently defined as follows:

32-bit Transponder ID Number Field		
<i>TAG TYPE</i>	<i>FACILITY CODE</i>	<i>INTERNAL TAG ID</i>
4 Bits	18 Bits	10 Bits
16 Possibilities	262,144 Possibilities	1,024 Possibilities
Most Significant Bit		Least Significant Bit

Tag Type

A 4-bit field currently established to uniquely differentiate California’s transponders from transponders that originate from agencies external to the state. In the future the unassigned bits could be used to recommend a unique North American agency numbering scheme, or to further describe the operational behavior of the transponder. The 4-bit field is defined in decimal notation as follows:

- 0- California SOV.
- 2- Existing Out of State
- 4- California HOV2
- 8- California HOV3+

1, 3, 9-15 - Unassigned. Available for a future use.

Facility Code

An 18-bit field used to identify the facility or entity conducting business. Facility Code ranges are assigned based upon the number of transponders that are projected to be utilized. The 18-bit field is defined in decimal notation as shown in the two tables below .Table 1 is for non-switchable transponder tags and Table 2 is for switchable transponder tags:

Table 1

Non Switchable Transponder Tags Facility Codes (Tag Type 0)		
<i>Agency</i>	<i>Facility Codes Assigned</i>	<i>No. of Transponders</i>
State of California	0 – 75,000	76,801,024
Facility Codes 75,001 thru 125,000 are reserved for Switchable Transponder Tags. See Table 2 below		
Sacramento County Dept. of Airports	125,001 – 125,020	20,480
TCA	129,314 – 132,092	2,845,696
TCA (Pilot Project)	132,093 – 132,094	2,048
SR-91	132,096 – 132,990	916,480
SANDAG I-15	132,992 – 133,001	10,240
Golden Gate Bridge	133,015 – 133,407	402,432
SANDAG/SBX	134,583 – 134,876	301,056
Port of Oakland	140,000 – 140,001	2,048
LA World Airports	141,000 – 141,052	54,272
BATA	145,000 – 148,928	4,023,296
SENTRI	184,876 – 185,022	150,528
TCA (Multiprotocol Tags)	186,000 – 186,500	513,024
SANDAG I-15	258,960 – 259,100	144,384
Caltrans ATCAS	260,096 – 262,136	2,089,948

Table 2

Switchable Transponder Tags Facility Codes (Tag Types 0,4,8)*		
<i>Agency</i>	<i>Facility Codes Assigned</i>	<i>No. of Transponders</i>
LA MTA	75,001 – 76,955	2,001,920
TCA	80,000 – 80,978	1,002,496
SR-91	81,000 – 81,366	375,808
SANDAG/SBX	83,000 – 83,009	10,240
BATA	90,000 – 93,907	4,001,792

*NOTE: Switchable Transponder Tags have Facility Code range from 75,001 to 125,000.

Indicates change from previous document version

Internal Tag ID

A 10-bit field used to refer to the unique identification numbers that belong to an assigned Facility Code. For each Facility Code, a block of 1,024 Internal Tag IDs will be assigned within the Transponder ID Number Field. Assignment of the Internal Tag ID's is the responsibility of the Facility Code Agency.

TITLE 21 AGENCIES OUT-OF-STATE:

Since the Title 21 standard is an open specification there are other agencies outside of California that can also use interoperable transponders. These external agencies could inadvertently duplicate California’s transponder ID number field assignments and render them non-unique.

Following is a listing of out-of-state Title 21 agencies that have contacted the California Department of Transportation to participate in California’s unique definition for the 32-bit Transponder ID Number field. Please note that this listing does not insure that the assignments are unique as they may have been duplicated by another agency outside of California.

32-bit Transponder ID Number Field Definition for Title 21 Agencies Out-of-state			
<i>Agency</i>	<i>Tag Type</i>	<i>Facility Codes Assigned</i>	<i>No. of Transponders</i>
Colorado E-470 Public Highway Authority	2	0 – 9,766	10,001,408
Denver International Airport	2	10,000 - 10, 029	30,720
Golden Ears Bridge Group Vancouver, Canada	2	15,000 – 16,000	1,025,024