

ALGID

Encryption Algorithm Identification Number

Assignment Guide and Procedures

Version: 2.1
April 15, 2015

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1. PURPOSE and SCOPE

- 1.1 The ALGID term stands for an Algorithm Identity for an encryption algorithm. Its use is described in section 4.0.
- 1.2 For the purpose of this assignment guide, the ALGID values are part of equipment that may transmit encrypted information in conformance with the Project 25 standards.
- 1.3 These guidelines specify the procedures for acquisition, modification, transfer, return, regulation and conservation of ALGID values.
- 1.4 Though these guidelines apply globally, they do not supersede the regulations, technical standards, or the requirements of any appropriate legal or regulatory authority.
- 1.5 These guidelines were developed by the consensus of representatives of entities within the wireless sector of the telecommunications industry. They are based on the content of the applicable TIA standards that pertain to private radio services described by the Project 25 technical standards.

2. REFERENCES

TIA-102.BAAA, *Project 25 FDMA Common Air Interface - New Technology Standards Project - Digital Radio Technical Standards*, Telecommunications Industry Association.

TIA-102.BAAC, *Project 25 Common Air Interface Reserved Values*, Telecommunications Industry Association.

3. ASSUMPTIONS and CONSTRAINTS

- 3.1 These guidelines should allow the greatest latitude to manufacturers, with due regard for confidentiality, while permitting the effective and efficient management of the finite ALGID numbering space while maintaining operational order throughout the Project 25 community.
- 3.2 The function of the ALGID administrator is performed by the TIA TR-8.15 ALGID administrator.
- 3.3 These guidelines and procedures remain in effect until a change in regulatory policy or industry consensus directs a change.
- 3.4 Applicants for an ALGID must provide evidence that they (a) need an ALGID, and (b) have already, or intend to actually manufacture equipment that requires an ALGID value.
- 3.5 Information concerning ALGID value assignments shall be maintained so that anyone who services or uses Project 25 equipment can easily identify the equipment or devices that use encrypted messages containing unique ALGID values.

4. ALGID FUNCTION and FORMAT

- 4.1 The ALGID (Algorithm Identity for encryption) is an 8 bit code that identifies manufacturer-specific, non-standard encryption algorithms that occur on the air interface from any kind of source or device. Most such equipment will be radio terminals. Other equipment includes test equipment, system simulators, and built-in test beacons which can be part of fixed radio site installations
- 4.2 Manufacturers of radio equipment to be deployed in accordance with Project 25 specifications have the option of initiating unspecified or non-standard encryption algorithms anywhere in the system. Since non-standard encryption functions by definition are manufacturer-specific, it is only necessary to mark, or identify, messages with a code that uniquely identifies the encryption algorithm. This unique code is the ALGID value.
- 4.3 When required in a voice message, the ALGID is mapped onto octet number 11 (the eleventh octet) of the Header Word of a voice message, or octet number 10 (the tenth octet) of the Encryption Sync Code Word that is embedded into voice messages.

5. ALGID ASSIGNMENT PRINCIPLES

- 5.1 Since a non-standard ALGID value is not required for equipment to properly function within the Project 25 technical specifications, applicants must give evidence that they actually need a non-standard ALGID value as part of the finite numbering space for non-standard Project 25 applications.
- 5.2 ALGID values are assigned to permit the most effective and efficient use of the finite ALGID numbering space without (a) compromising the confidentiality of the applicants for an ALGID value, and (b) unnecessarily encumbering or otherwise discouraging manufacturer's from completing applications for an ALGID value.
- 5.3 Upon receiving an application, the ALGID administrator shall assign an ALGID value to a manufacturer who gives evidence that the ALGID value is needed, and that equipment in need of an ALGID value exists, or there is a genuine intent to manufacture the applicable equipment.
- 5.4 It should be easily and quickly clear to anyone in the community of those who service and use Project 25 equipment how to correlate messages with unique ALGID values with the equipment that generated the messages. Since the ALGID value uniquely identifies each encryption algorithm, there is only one assignment for each encryption algorithm. Different organizations that choose to interoperate with non-standard encryption algorithms should use the same ALGID value.
- 5.5 ALGID values are a public resource. The assignment of an ALGID value does not imply ownership of the resource by either the entity to which it was assigned, or by the entity or agent performing the administrative functions described in these guidelines.
- 5.6 The ALGID administrator will: (a) assign ALGID values in a fair, impartial, and timely manner to any applicant that meets the criteria for assignment (see Section 6.0), and (b) assign ALGID values on a first come, first served basis. The ALGID administrator will make all assignments in accordance with the guidelines in Section 8.0.

- 5.7 In the event the ALGID administrator receives sensitive information from an applicant that is identified as proprietary and confidential, the information will not be shared with non-administrative personnel.
- 5.8 As there is no need for the information, the ALGID administrator shall, at no time, require and ask for confidential, operational information from any entity within the Project 25 user's community.
- 5.9 Information that is requested of applicants in support of ALGID value applications shall be uniform and kept to a minimum.
- 5.10 The ALGID value of \$80 shall not be assigned to an applicant; it is a reserved value used for unencrypted messages.
- 5.11 If all the available ALGID values have been assigned, then the administrator will recover values that have been assigned but are unused.
- 5.12 Assigned ALGID values should be deployed as soon as possible, but no later than 24 months (2 years) after assignment. The ALGID administrator may extend the time a manufacturer has to deploy an ALGID value for a period that does not compromise the availability of ALGID values. ALGID value assignees are only required to notify the administrator of the first successful ALGID deployment. Though there is no need to notify the administrator of subsequent deployments, records of equipment that use the assigned ALGID value shall be maintained. The intention of the deployment notification process is to allow a means for the administrator to determine which assigned ALGID values can be reassigned if they are recovered. Once a piece of equipment using an assigned ALGID value is deployed into the Project 25 community, the ALGID value cannot, under normal circumstances, be reassigned. If an assigned ALGID value needs to be reassigned after equipment using the ALGID value has been deployed, then the administrator will need the identities of the equipment that may still be at large in the Project 25 community. It is only necessary, for this purpose, to identify the equipment by model number, description, FCC Identification, or any other means that can point out the affected equipment. Identifying individual pieces, e.g. by serial number, is superfluous to this process.
- 5.13 A manufacturer, which is denied an ALGID value assignment, or extension for deployment, has the right to appeal the decision (see Section 12.0).
- 5.14 Manufacturers applying for an ALGID value, or already assigned an ALGID value, shall comply with these guidelines. Manufacturers assigned an ALGID value before these guidelines were implemented should comply with these guidelines.
- 5.15 An ALGID value recovered by, or returned to, the administrator for reassignment may remain dormant. If no equipment has been manufactured by the previous assignee from which the ALGID was recovered, then the ALGID value may be reissued to another applicant. If, however, equipment has already been produced and deployed with the recovered or returned ALGID value, then the returned or recovered ALGID cannot normally be re-issued. Returned or recovered ALGID values that are already deployed can be re-issued if the private land mobile industry is prepared to accommodate the re-issue in some orderly way.
- 5.16 There may be an administrative fee associated with an application for an ALGID value.

6. ALGID ASSIGNMENT CRITERIA

- 6.1 The assignment criteria for ALGID values described in this section should be considered by a potential applicant before submitting an application for an ALGID value, as these criteria will be used by the administrator as part of the review process for applications.
- 6.2 Applicants for ALGID values must provide evidence of an existing need for an ALGID value, or certification of the intention to manufacture equipment in need of an ALGID value. In both cases, an existing need as well as an intended need, evidence for the need for an ALGID value other than \$80 should be included in the application.
- 6.3 An ALGID value will only be assigned by the administrator upon receipt and approval of a completed *Form A - Application for ALGID Value*.

7. RESPONSIBILITIES of ALGID APPLICANTS and ASSIGNEES

- 7.1 Manufacturers requesting ALGID values shall comply with these assignment guidelines. Manufacturers already assigned an ALGID value should comply with these assignment guidelines. Copies of the guidelines can be obtained from the ALGID value administrator.
- 7.2 Applicants must apply in writing to the ALGID value administrator by completing *Form A - Application for ALGID Value*.
- 7.3 ALGID value assignees shall maintain and update an accurate record of the identity of Project 25 equipment that uses the assigned ALGID value in Project 25 messages. Examples of such records are: model numbers, equipment descriptions, or FCC Identification numbers. These records may be required for audit purposes (see Section 10.0).
- 7.4 ALGID value assignees will participate in the ALGID value audit process (see Section 10.0).
- 7.5 ALGID value assignees will deploy equipment using the ALGID value within the time allotted by the administrator. The allotted time is normally two (2) years, but the time can be extended by the administrator, and only by the administrator, such that the availability of ALGID values is not compromised. Assignees are required to notify the administrator, by any means, of the need for an extension if the need for an ALGID value is still anticipated. Assignees will notify the administrator of a first successful deployment by completing and submitting *Form C - Deployment of ALGID Value*. The deployment, the accompanying notification to the administrator and the maintenance of accurate records survives through mergers, acquisitions, and transfers (see Subsection 5.12). There is no need for the assignee to notify the administrator of subsequent deployments, but records of those deployments need to be maintained by the assignee.
- 7.6 ALGID value assignees that no longer require an assigned ALGID value shall return the resource to the administrator by completing and submitting *Form F - Return of ALGID Value Assignment*. The administrator may call upon an ALGID assignee to return the assigned ALGID if (a) the ALGID value was not deployed in the allotted

time period, plus extensions, specified by the administrator, or (b) the assigned ALGID value is not used in accordance with these guidelines. Assignees will cooperate with the administrator in preserving the availability of the ALGID value resource for the benefit of the entire Project 25 community.

8. RESPONSIBILITIES of the ALGID ADMINISTRATOR

- 8.1 It is the responsibility of the ALGID value administrator to manage the assignment of ALGID values such that (a) assignments are fair, timely, and efficient; and (b) the availability of ALGID values is preserved for the benefit of all members of the Project 25 community. The administrator serves for a term of two (2) years from the day of appointment by the TIA TR-8.15 Engineering Committee.
- 8.2 The ALGID administrator will provide the industry with information on the structure, use and management of ALGID values.
- 8.3 The ALGID administrator will provide copies of these guidelines and forms to applicants and assignees, and assist them in completing the forms.
- 8.4 The ALGID administrator will inform applicants of the status of their applications using *Form B - Disposition of ALGID Value Application*. The time limit for sending *Form B - Disposition of ALGID Value Application* to applicants is 30 days, and the form will inform the applicant of one of the three possible dispositions: (1) approved, (2) denied, or (3) more information required.
- 8.5 If approved, the ALGID administrator will assign ALGID values to manufacturers on *Form B - Disposition of ALGID Value Application*. Though ALGID values can be assigned in any order, the administrator may assign the values in accordance with any scheme or plan that organizes specific values in groups or categories. If an applicant has a technical consideration that requires the exclusion of certain codes, or a preference for certain codes, then the administrator will try to accommodate the requests.
- 8.6 When assigning ALGID values that have been returned or reclaimed, the administrator will ensure the ALGID value has never been deployed, or otherwise returned to the pool of resources by appropriate action of the TIA TR-8.15 Engineering Committee.
- 8.7 The ALGID administrator will maintain an accurate and up-to-date list of assigned ALGID values together with applicable information on the assignees. Except for an indication that proprietary or confidential information was received and reviewed for an ALGID value assignment, such sensitive information will not be disclosed outside the ALGID value administrator's staff.
- 8.8 The ALGID administrator will update ALGID value records as required to maintain their accuracy, and respond to requests to changes in assignment information reported by assignees on *Form D - Request for Change in ALGID Value Assignment Information* by returning *Form E - Confirmation of Change in ALGID Value Assignment Information* to assignees within 30 days.

- 8.9 The ALGID administrator will publish a list of assigned ALGID values, by encryption algorithm and corresponding ALGID value, to the TIA TR-8.15 Engineering Committee upon request.
- 8.10 The ALGID administrator will investigate any ALGID value that has not been deployed within the required time frame, and issue an extension where appropriate. The ALGID administrator will notify the TIA TR-8.15 Engineering Committee if an assignee's failure to deploy an assigned ALGID value is contributing to a shortage of ALGID values.
- 8.11 The ALGID administrator will reclaim ALGID values as needed.
- 8.12 The ALGID administrator will conduct an audit of ALGID value assignees as directed by the TIA TR-8.15 Engineering Committee.
- 8.13 The ALGID administrator will inform the TIA TR-8.15 Engineering Committee of any required revisions to these assignment guidelines.

9. ALGID RECLAMATION PROCEDURES

- 9.1 Assignees of ALGID values will return ALGID values no longer needed by completing and submitting *Form F - Return of ALGID Value Assignment*.
- 9.2 Assignees will cooperate with the ALGID value administrator in carrying out its reclamation and auditing duties.
- 9.3 The ALGID value administrator will contact any assignee identified as not having returned to the administrator, for reassignment, ALGID values no longer required, not deployed, or not used in conformance with these guidelines. The administrator will first seek clarification from the assignee regarding any alleged detrimental non-use or misuse of an ALGID value. If the assignee provides a satisfactory explanation that is in accordance with these guidelines, then the ALGID value will remain assigned. If the assignee does not provide a satisfactory explanation, then the administrator will require the assignee to return the ALGID value by submitting a *Form F - Return of ALGID Value Assignment*. If direct contact can not be made with the assignee within 60 days regarding an alleged detrimental non-use or misuse of an ALGID value, then the administrator will send a registered letter to the assignee requesting contact with the administrator within 60 days regarding the matter. If the letter is returned as not delivered or no response is received, then the administrator will inform the TIA TR-8.15 Engineering Committee of the status of the apparent dormant status of the assigned ALGID value.
- 9.4 The ALGID value administrator will refer to the TIA TR-8.15 Engineering Committee any assistance, which is not resolved through the routine procedures in this section. The TIA TR-8.15 Engineering Committee is free to accept referrals, investigate referrals, attempt to resolve referrals, or otherwise direct or coordinate action with appropriate industry fora or regulatory bodies for resolution.

10. ALGID ASSIGNMENT AUDITS

- 10.1 The assignment and management of ALGID values will be carried out in order to efficiently and effectively administer a limited public resource, and eliminate or delay the potential for ALGID value exhaustion. The processes invoked to achieve these objectives shall not impede the introduction or maintenance of competitiveness in the provisioning of private mobile radio services within the Project 25 community.
- 10.2 Assignment audits may be carried out only to ensure consistent compliance with these guidelines. Assignment audits may also be carried out as a response to a complaint from outside the administrator's organization, or as directed by the TIA TR-8.15 Engineering Committee.
- 10.3 Audits may be conducted by the administrator or by a neutral third party acceptable to the auditee and the administrator.
- 10.4 Audits may be conducted on the assignee's premises or at a mutually acceptable location and time. The auditor's staff shall not copy or remove information from the premises nor will the staff disclose information to non-auditor personnel.
- 10.5 The administrator or auditor will expect to review certain information to ensure conformance with these guidelines: (a) verification of the date of the first deployment of the assigned ALGID value, (b) verification of the need for a unique ALGID value, and (c) verification of any special request asserted by an assignee or applicant.
- 10.6 Audit results should be used to identify and recommend corrective action as necessary to the appropriate industry forum. Corrective action can include: (a) modification(s) to these assignment guidelines, (b) additional training for assignees, (c) additional training for the administrator, (d) return of the ALGID value, (e) a request for additional information from the assignee, or (f) changes to the way records of ALGID value assignments are maintained.
- 10.7 Audit results with respect to assignee information will be treated as proprietary and confidential information.
- 10.8 Failure to participate in a cooperative audit may invoke an ALGID value reclamation procedure.

11. MAINTENANCE of GUIDELINES

- 11.1 As it becomes necessary to modify these guidelines, as determined by the administrator, the results of an audit, or the consensus of an industry forum; the identifying entity will submit the suggested modifications to the TIA TR-8.15 Engineering Committee, which will coordinate the modification process. Questions or concerns regarding these guidelines may be sent to:

Engineering Committee TR-8.15 ALGID Value Administrator
c/o Telecommunications Industry Association
2500 Wilson Boulevard, Suite 300
Arlington, VA 22201
USA

Phone: +1.703.907.7700

Fax: +1.703.907.7727

12. APPEALS PROCESS

- 12.1 Disagreements may arise between the ALGID value administrator and an applicant or assignee in the context of the administration and management of ALGID values and the application of these guidelines. In all such cases, the administrator and the applicant or assignee will make reasonable, good faith efforts to resolve disagreements among themselves, consistent with these guidelines, and prior to pursuing any kind of appeal.
- 12.2 Appeals may include, but are not limited to: (a) the applicant or assignee being granted the opportunity to resubmit the matter to the administrator for reconsideration with or without additional information, or (b) clarification or interpretation of these guidelines to the TIA TR-8.15 Engineering Committee for resolution.
- 12.3 Unless mutually otherwise agreed to by all concerned parties, questions and submitted matter will be generic and the identity of the appellant will be protected.
- 12.4 Reports on resolutions, the context of which will be agreed upon by all the involved parties, will be kept on file by the administrator. At a minimum, the report will include the final disposition, e.g. whether or not an ALGID value was assigned, or an extension is granted.

13. GLOSSARY

ALGID – Encryption Algorithm Identification Number

Project 25 - Refers to standards, or a system described by documents, variously called APCO/NASTD/FED *Project 25*, or a system of standards designated as TIA 102 with some suffix letters. The references are to systems and techniques employing digital techniques for Private Land Mobile Radio Service.

14. REVISION HISTORY

Version 0.0: First Draft, 28 May 2004

Version 1.0: Added AES-128, 14 September 2010

Version 1.1: Added ADP (approved 12 August 2009), 11 February 2011

Version 2.0: Added MSI Reserved values, 21 February 2015

Version 2.1: Changed term “MSI Reserved” to “MSI Assigned”, 15 April 2015

Forms

The following forms are used for communications between the ALGID administrator and applicants for and assignees of ALGID values. The forms include:

Form A - Application for ALGID Value

Form B - Disposition of ALGID Value Application

Form C - Deployment of ALGID Value

Form D - Request for Change in ALGID Value Assignment Information

Form E - Confirmation of Change in ALGID Value Assignment Information

Form F - Return of ALGID Value Assignment

Completed Forms are returned to:

Engineering Committee TR-8.15 ALGID Value Administrator
c/o Telecommunications Industry Association
2500 Wilson Boulevard, Suite 300
Arlington, VA 22201
USA

Phone: +1.703.907.7700

Fax: +1.703.907.7727

Form A - Application for ALGID Value

TO: Engineering Committee TR-8.15 ALGID Value Administrator

Entity Requesting ALGID Value Assignment:

Contact Name:

Company:

Address:

Phone:

Fax:

E-mail:

Description of radio equipment, or other equipment, requiring an ALGID value, and the need for an assignment:

The signature below indicates that the applicant:

- Certifies the accuracy of the information provided in the application.
- Commits to deploy the assigned ALGID Value within the time specified by the assignment guidelines
- Agrees that the use and deployment of the ALGID value will conform to the assignment guidelines, Project 25 practice, local regulatory restrictions, and that the use of the ALGID value that is not in conformance with the assignment guidelines and applicable regulatory rules may result in forfeiture.

Authorized Signature of Requester:

Application Date (day/month/year):

If a non-refundable application fee in accordance with Section 5 applies, payment of the non-refundable fee is with:

Enclosed check (payable to: Telecommunications Industry Association)

Credit Card

Visa

MasterCard

American Express

Credit Card Number

Expiration

Exact name of card holder:

Signature of card holder:

Dated:

Return completed form and payment to:

Engineering Committee TR-8.15 ALGID Value Administrator
 c/o Telecommunications Industry Association
 2500 Wilson Boulevard, Suite 300
 Arlington, VA 22201
 USA

Form B - Disposition of ALGID Value Application

TO: Applicant for ALGID Value Assignment:

Contact Name:

Company:

Address:

Your application filed on (day/month/year) for an ALGID value has been reviewed by the administrator. The action taken below applies.

Your application has been approved. The ALGID assigned for your use is:
and is effective on the date (day/month/year):

The information recording the assignment is attached. Please notify the administrator of any errors or changes to the attached information.

Your application has been denied for the following reason(s):

You are entitled to appeal this denial in accordance with the Section 12.0 of the assignment guidelines.

The following information is needed in order to process your application:

Name of ALGID value administrator:

Signature of ALGID value administrator:

Date (day/month/year):

Engineering Committee TR-8.15 ALGID Value Administrator
c/o Telecommunications Industry Association
2500 Wilson Boulevard, Suite 300
Arlington, VA 22201
USA

Form C - Deployment of ALGID Value

I certify that ALGID value _____ has been deployed on (day/month/year):

This ALGID value is assigned to:

Contact Name:

Company:

Address:

Phone:

Fax:

E-mail:

Authorized Signature of Assignee:

Deployment Date

Return completed deployment notification to:

Engineering Committee TR-8.15 ALGID Value Administrator
c/o Telecommunications Industry Association
2500 Wilson Boulevard, Suite 300
Arlington, VA 22201
USA

Form F - Return of ALGID Value Assignment

The ALGID value _____ is no longer required effective (day/month/year):

This ALGID value was assigned to:

Contact Name:

Company:

Address:

Phone:

Fax:

E-mail:

The ALGID value was deployed on (day/month/year) :

The ALGID value was never deployed.

I certify that the ALGID value can be returned to the assignment pool in accordance with the assignment guidelines.

Authorized Signature of Assignee:

Deployment Date

Return completed ALGID return form to:

Engineering Committee TR-8.15 ALGID Value Administrator
c/o Telecommunications Industry Association
2500 Wilson Boulevard, Suite 300
Arlington, VA 22201
USA

ALGID Assignments

As of 15 April 2015, the ALGID values were assigned as follows.

00	Accordion 1.3
01	Baton (auto even)
02	Firefly
03	Mayfly
04	Saville
05	MSI Assigned
06	
07	
08	
09	
0A	
0B	
0C	
0D	
0E	
0F	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
1A	
1B	
1C	
1D	
1E	
1F	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
2A	
2B	
2C	
2D	
2E	
2F	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
3A	
3B	
3C	

3D	
3E	
3F	
40	
41	Baton (auto odd)
42	
43	
44	
45	
46	
47	
48	
49	
4A	
4B	
4C	
4D	
4E	
4F	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
5A	
5B	
5C	
5D	
5E	
5F	
60	
61	
62	
63	
64	
65	
66	
67	
68	
69	
6A	
6B	
6C	
6D	
6E	
6F	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	

7A	
7B	
7C	
7D	
7E	
7F	
80	Unencrypted
81	DES
82	
83	Triple DES, 168 bit key
84	AES - 256
85	AES - 128
86	
87	
88	
89	
8A	
8B	
8C	
8D	
8E	
8F	
90	
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92	
93	
94	
95	
96	
97	
98	
99	
9A	
9B	
9C	
9D	
9E	
9F	MSI Assigned
A0	DVI-XL
A1	DVP-XL
A2	MSI Assigned
A3	MSI Assigned
A4	MSI Assigned
A5	MSI Assigned
A6	MSI Assigned
A7	MSI Assigned
A8	MSI Assigned
A9	MSI Assigned
AA	Advanced Digital Privacy (ADP)
AB	MSI Assigned
AC	MSI Assigned
AD	MSI Assigned
AE	MSI Assigned
AF	MSI Assigned
B0	
B1	
B2	
B3	
B4	
B5	

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B6	
B7	
B8	
B9	
BA	
BB	
BC	
BD	
BE	
BF	
C0	
C1	
C2	
C3	
C4	
C5	
C6	
C7	
C8	
C9	
CA	
CB	
CC	
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