

Policy on Key Words in ARINC Standards

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Premise

Since at least the 1970's the groups preparing ARINC Standards have been scrupulously instructed by the staff to avoid the use of the word "shall" in favor of the word "should." The origins of this practice have been lost. However, the primary reason that survives is a desire not to appear to be stating a 'regulatory' or governmental requirement. This practice has meant that the normal usage of "shall" and "should" have not been available to writers of ARINC Standards. Instead of its normal meaning, the word "should" either always means you must comply or it sometimes means you may ignore the requirement. In either case, the meaning is not as clear as it might be.

Since this policy is so well ingrained, it should not be changed without adequate justification. Recent draft documents have been prepared which illustrate the need for a change.

Policy on Key Words in ARINC Standards

The long-standing informal policy on avoiding the word "shall" in favor of the word "should" is hereby rescinded. In the future, developers of ARINC Standards are encouraged to use the following guidance:

In ARINC Standards several words may be used to signify the requirements in the specification. These words may be capitalized. This policy defines these words as they should be interpreted in ARINC Standards. Authors who follow these guidelines should incorporate this phrase near the beginning of their document:

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL," "SHALL NOT," "SHOULD," "SHOULD NOT," "MANDATORY," "RECOMMENDED," "MAY," and "OPTIONAL" in this document are to be interpreted as described in the Policy on Key Words in ARINC Standards. The use of any of these terms is not intended to affect the status of this document as a voluntary standard but rather to clarify which features are necessary to claim compliance to the standard.

Note that the force of these words is modified by the requirement level of the document in which they are used. Since all ARINC Standards are voluntary standards, their use does not change that status.

1. **MUST** - This word, or the terms "REQUIRED," "SHALL" or "MANDATORY" mean that the definition is an absolute requirement of the specification.
2. **MUST NOT** - This phrase, or the phrase "SHALL NOT," mean that the definition is an absolute prohibition of the specification.
3. **SHOULD** - This word, or the adjective "RECOMMENDED," mean that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.

4. SHOULD NOT - This phrase, or the phrase "NOT RECOMMENDED," mean that there may exist valid reasons in particular circumstances when the particular behavior is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behavior described with this label.

5. MAY This word, or the adjective "OPTIONAL," mean that an item is truly optional. One vendor may choose to include the item because a particular marketplace requires it or because the vendor feels that it enhances the product while another vendor may omit the same item. An implementation which does not include a particular option MUST be prepared to interoperate with another implementation which does include the option, though perhaps with reduced functionality. In the same vein an implementation which does include a particular option MUST be prepared to interoperate with another implementation which does not include the option (except, of course, for the feature the option provides.)

6. Guidance in the use of these Imperatives

Imperatives of the type defined in this policy must be used with care and sparingly. In particular, they MUST only be used where it is actually required for interoperation or to limit behavior which has potential for causing harm (e.g., limiting retransmissions). For example, they must not be used to try to impose a particular method on implementers where the method is not required for interoperability.

7. Guidance for existing ARINC Standards

No existing ARINC Standard need be changed. If a supplement is developed, it should be written in the same style and with the same terminology usage as the original document. Exceptions may be made after review by the staff and with the concurrence of the Chairman.

This policy was approved by the AEEC in the Advisory Meeting held 3Oct2005 in Seattle, WA.