Project	**IEEE 802.16 Registration Authority Issue**
Title	**Proposed FAQ on 802.16 Operator ID for IEEE Registration Authority**
Date:	**2006-09-27**
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Re:	IEEE 802.16-06/016r3 (Letter to RAC regarding 802.16)
Abstract	This document is input to Operator ID ad hoc.
Purpose	As the basis of an IEEE Registration Authority to assign Operator IDs per IEEE Std 802.16.
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General Information

Q: What is an Operator ID (OID)?

A: An OID is a 24-bit number that, per IEEE Std 802.16, is broadcast by each base station as part of its Base Station ID. An 802.16 network consists of one or more base stations operating as a coordinated system, with each base station in the coordinated network broadcasting the same OID. The IEEE assigns the IEEE 802.16 Operator ID to be used as the Operator ID.

Q: Do I have to apply for an operator ID to deploy an 802.16 network?

A: No. Typical commercial systems providing public service require a globally unique OID. These may be applied for as an IEEE 802.16 Operator ID or derived from the operators E.212 MCC-MNC assignment. For networks providing service to a limited group of users where a globally unique OID is not required by the operator, the OID must be obtained from the public OID pool. In this deployment scenario, the OID may be reprogrammed to avoid having different networks in the same geographical area using the same OID.

Q: Why do I need an Operator ID?

A: See the tutorial<insert link to tutorial>

Q: Can I use my OUI as an IEEE 802.16 Operator ID, or vice versa?

A: No. These are separate identifiers, and must be applied for separately.

Q: What is a Base Station ID?

A: The Base Station ID is a 48-bit number defined by IEEE Std 802.16 to be broadcast by each base station. The OID defines the most significant 24-bits of the Base Station ID. An 802.16 network consists of one or more base stations operating as a coordinated system, with each base station in the coordinated network broadcasting the same OID. By programming unique values in the least significant 24-bits of the Base Station ID for each base station, the Base Station ID then uniquely identifies each and every base station in the coordinated 802.16 network.

Q: How can I obtain the names and ID numbers of those companies who own an IEEE 802.16 Operator ID?

A: The latest available version of the OID assignments can be found here<insert hyperlink to public listing> on the IEEE Standards website.

Q: What if the company name, address or contact information changes after I have received the IEEE 802.16 Operator ID?

A: Please complete the Information Change Form<insert hyperlink to change page>. If there is a company name change due to purchase or sale please also fax a press release or some details

of the company name change to +1 732-562-1571<to be confirmed by RAC>. The company name change will not be uploaded to the public listing unless the press release or details are received.

Q: Can I re-sell the IEEE 802.16 Operator ID after I obtain it?

A: No. If a company is sold, the OID may be transferred to the new company. However, the OID cannot be sold by anyone other than IEEE. See above.

Q: What if I have additional questions about IEEE 802.16 Operator IDs?

A: For further information, contact IEEE Registration Authority<insert e-mail hyperlink>.

Ordering Information

Q: How can I obtain an assignment of an IEEE 802.16 Operator ID?

A: Check the public listings<insert hyperlink to public listing> to determine whether your company already has an assignment. If not, then complete the OID application here<insert hyperlink to application>.

Once the application is completed successfully, the Requestor will receive an e-mail with a tracking number and payment information. The application will be processed within seven days after receipt of payment as long as there are no problems with the information on the application or the payment. The Requestor will receive an e-mail with the assignment information once the application is processed.

Q: What are the costs involved in obtaining and IEEE 802.16 Operator ID?

A: The OID cost is $[1200] (US)<must confirm> each. The only other fees that would be involved is a $[TBD]<must confirm> bank fee that is only applicable with the wire transfer payment method. There are no annual fees.

Q: My company needs multiple IEEE 802.16 Operator ID s for multiple networks. Can we receive them?

A: Yes. The IEEE will accept application for an allocation of up to 100 OIDs. If additional OIDs are needed, you may complete an additional application. However, users of 802.16 OIDs are encouraged to make most efficient use of this limited numbering resource. In typical deployment scenarios, the network operator will need only a single OID, keeping in mind that a single OID will support over 16 million Base Station IDs.

Standards/Uses

Q: My regulator requires that I use my E.212 MCC-MNC to identify my network. How can I do this with IEEE Std 802.16 and OID?

A: The MCC + MNC combination is a valid, globally unique 802.16 OID. Specific coding of the MCC + MNC is required in order to be used in an 802.16 network. Coding instructions are included in the tutorial<insert link to tutorial>.

Q: If my organization already has an E.212 MCC-MNC allocation, are we compelled to use it as the Operator ID with our 802.16 network? Are we disallowed from applying for an 802.16-specific OID from IEEE RAC?

A: No, the formula for conversion<insert link to tutorial> of an E.212 MCC-MNC pair to an 802.16 OID is only provided for those organizations that wish to use their E.212 network ID with 802.16 or are required by their regulator to use the MCC-MNC. Organizations should check with their regulatory authorities as to whether they are required to use their current E.212 MCC-MNC pair to identify their networks using 802.16 standards. Any organization may obtain 802.16-specific OID(s) from the IEEE Registration Authority, subject to the general terms & conditions covering application.

Q: Are there geographic restrictions on the use of an OID.?

A: The OID is assigned for worldwide use.

Q: Are all of the OIDs globally unique?

Q: If we do not apply for our own OID to program into our base stations, will they all have the same "default" operator ID (e.g. "0" or similar)?

A: The 802.16 standard requires the use of the OID, allocated by IEEE. Each system operator should either apply to the IEEE for a globally unique OID, use their MCC-MNC as OID (MCC-MNC is assigned by local regulator; a coding example is here<insert link to tutorial>) or ensure the OID is programmed with one of the Private network OIDs. Failure to populate the OID in one of these ways will result in non-standard deployment and non-standard results. The value of the OID field in new equipment is manufacture-specific and should be verified by the operator.

Q: When may a Private OID be used?

A: A "Private" network OID is selected from the range<insert link to tutorial> allocated for Private networks. Although a Private network OID is not guaranteed to be globally unique, it will not cause mis-operation of any 802.16 SS/MS within its coverage or interference zones. Private network OIDs must not be used on base stations in networks offering public service. Operators of base stations or networks using private IDs should utilize appropriate access security techniques.

Q: What is the probability of duplication of a private network ID?

A: Although the total range of values is large, calculations of the probability of duplication in making a selection of values randomly from the full range yield the following results:

Within 10 random selections, there is a probability of duplication of 0.18%
With 23 random selections, there is a probability of duplication of ~1%.
There is a 10% probability of duplication within a selection of 72 numbers;
There is a 50% probability of duplication within a selection of 185 numbers;
There is a 99% probability of duplication within a selection of 476 numbers.

From this it may be concluded that there is, for example, a 10% chance that mis-operation due to OID duplication may occur if there are 72 (otherwise identical) base stations closely located such that their associated MSs may see signals from all the other BSs.