**MCPTT Off-Network Protocol (MONP), on top of UDP**

3GPP TS 24.379 (<http://www.3gpp.org/DynaReport/24379.htm>), Annex K

**Regstration Form:**

|  |  |
| --- | --- |
| Assignee Name | <MCC name> |
| Assignee E-mail | <MCC email address> |
| Contact Person | <MCC name> |
| Contact E-mail | <MCC email address> |
| Resources required | Port number and service name |
| Transport Protocols | UDP |
| Service Code |  |
| Service Name | 3gpp-monp |
| Desired Port Number |  |
| Description | Mission Critical Push To Talk over LTE (MCPTT) Off-Network Protocol (MONP) is a 3GPP control protocol used by a MCPTT client hosted on a User Equipment (UE). MONP facilitates the MCPTT public safety service between MCPTT clients hosted on UEs communicating using IP using a single physical network segment, separated from Internet and any other IP network. The network segment is wireless network segment and UEs are mobile devices. The MCPTT public safety service offers half-duplex voice communication. |
| Reference | 3GPP TS 24.379 |
| Defined TXT keys | N/A |
| If broadcast/multicast is used, how and what for? | When performing off-network group calls, the MCPTT client initiates the group call to an MCPTT Group by sending a group call announcement message. The group call announcement message is a Mission Critical Push To Talk over LTE (MCPTT) Off-Network Protocol (MONP) message which is sent as a UDP message to a multicast IP address of the MCPTT group so that it is ensured that the MONP messages sent for the corresponding MCPTT group are only received by the MCPTT group's members. |
| If UDP is requested, please explain how traffic is limited, and whether the protocol reacts to congestion. | The number of Mission Critical Push To Talk over LTE (MCPTT) Off-Network Protocol (MONP) messages that need to be sent between MCPTT clients depends upon the number of members of the MCPTT group. MONP employs a back-off mechanism to defer transmission of another MONP message once a MONP message is received. MONP controls the number of messages transmitted within a certain, configurable amount of time, thus averting congestion. At maximum a few MONP messages per second are expected in communication between MCPTT clients. MONP does not support any reaction to congestion. |
| If UDP is requested, please indicate whether the service is solely for the discovery of hosts supporting this protocol. | Mission Critical Push To Talk over LTE (MCPTT) Off-Network Protocol (MONP) is not used solely for discovery of hosts supporting this protocol. |
| Please explain how your protocol supports versioning. | Mission Critical Push To Talk over LTE (MCPTT) Off-Network Protocol (MONP) does not support versioning. |
| If your request is for more than one transport, please explain in detail how the protocol differs over each transport. | N/A |
| Please describe how your protocol supports security. Note that presently there is no IETF consensus on when it is appropriate to use a second port for an insecure version of a protocol. | Mission Critical Push To Talk over LTE (MCPTT) Off-Network Protocol (MONP) does not support security. MONP relies on the security mechanisms of the lower layers. |
| Please explain why a unique port assignment is necessary as opposed to a port in range (49152-65535) or existing port. | As a general principle, 3GPP protocols use assigned User Ports, e.g. GTP-C uses UDP port number 2123, GTP-U uses UDP port number 2152, S1AP uses SCTP port number 36412, X2AP uses SCTP port number 36422, WLCP uses 36411. A dynamic port number (i.e. 49152 to 65535) cannot be used for the Mission Critical Push To Talk over LTE (MCPTT) Off-Network Protocol (MONP) because of the nature of communication on a single physical network segment, separated from Internet and any other IP network. The requirement of MONP to continuously listen for incoming messages needs an always active listener port. There is no local server that is administering the use of emphemeral ports in the MONP architecture, so there would be no way for one MCPTT client to know that a port is already being used by another MCPTT client. Communication can potentially be long-lived and MCPTT clients could leave and re-join the calls. |
| Please explain the state of development of your protocol. | Protocol Standard definition. No implementation exists yet. |
| If SCTP is requested, is there an existing TCP and/or UDP service name or port number assignment? If yes, provide the existing service name and port number. | N/A |
| What specific SCTP capability is used by the application such that a user who has the choice of both TCP (and/or UDP) and SCTP ports for this application would choose SCTP? See [RFC 4960](http://www.iana.org/go/rfc4960) section 7.1. | N/A |
| Please provide any other information that would be helpful in understanding how this protocol differs from existing assigned services | This protocol is between the UEs communicating using IP over a single physical network segment, separated from Internet and any other IP network. An MCPTT public safety service offered by the MCPTT clients hosted by the UEs is for public safety. The MCPTT public safety service offers half-duplex voice communication.This differs from existing protocols in 3GPP where UDP ports have been requested, as those protocols have been either between the UE and network or between network elements. |

**Reply from IANA:**

We are awaiting some coordination for the assignment of 3GPP protocols.

In general, because these are not used in the public Internet, they would not be eligible for assignment. We r3ecently made what we believed to be one of the last exceptions, only to have another request at this time. As a result, this request is being deferred until further coordination with the 3GPP group.

**Why a dynamically assigned port number would not work**

* MONP is used when UEs are off-network - there is no network entity and all the UEs are equal. So, while off-network, there is none to decide which dynamically assigned port to use for MONP.
* it might be possible to define a UE configuration parameter (e.g. MONP-UDP-port-number) and require the UE to use it for MONP but this would have the following disadvantages:
* MCPTT providers need to agree in advance which dynamically assigned port to use for MONP
* MCPTT providers need to configure all MCPTT UEs with the agreed dynamically assigned port in the MONP-UDP-port-number configuration parameter
* a UE with MONP implementation would need to bind the UDP port indicated by the MONP-UDP-port-number configuration parameter whenever the UE starts using IP stack and keep it bound until the UE stops using the IP stack. Reason: if not done this way, the port indicated by the MONP-UDP-port-number configuration parameter can be assigned by the OS to another UDP based application (as this port is a dynamically assigned port).