

## A Framework for MetaNet Based P2P IM Communication

I propose a draft of a frame work for MetaNet based P2P IM communication. Based on this framework, a MetaNet based P2P IM application or an email similar system can be easily developed. It includes two protocols, IM protocol and N protocol. IM protocol transmits messages between users. N protocol maps user names to addresses.

The IM protocol format is shown as follows.

[IM Protocol Identifier][source user name][message type][encryption type][message][other information][time stamp][signature]

**IM Protocol Identifier(IMPI)**=17KUVffFHVpxueePCBzp5gJWAJs9nx5cr

**source user name** is the name of who send this message. It can be mapped to an address by N protocol. The name can be replaced by an address directly.

**message type** is type of the message. For example, text, image, audio, video, html.

**encryption type** denotes which encryption algorithm is used to encrypt the message. For example, plain, ECC, RSA, AES.

**Message** is the data to be send. Message can be encrypted.

**Other information.** Leave it empty if no other info. Do not remove the bracket.

Time stamp is unique and increased for [IMPI][source user name][message type][encryption type][message][other information]. Any two M protocol op\_returns with the same [IMPI][source user name][message type][encryption type][message][other information], their time stamps should be different. If two or more M protocol op\_returns are the same, the first verified one is valid.

**signature** is the signature of [17KUVffFHVpxueePCBzp5gJWAJs9nx5cr][source user name][message type][encryption type][message][other information][time stamp] by the secret key of the address mapped by the [source user name]. The public key of the address must be known. The signature is used to validate the message op\_return.

N protocol please refer to [a Framework for MetaNet Pages](https://github.com/wy000000/A-Framework-for-MetaNet-Pages) (<https://github.com/wy000000/A-Framework-for-MetaNet-Pages>).

If Bob wants to send message to Alice, they should register their names by N protocol. Then the names of Bob and Alice are mapped to unique addresses respectively. Bob send a transaction to the address mapped by the name of Alice with the op\_return [IMPI][Bob][message type][encryption type][message][other information][time stamp][signature]. Alice listen to her address and receives the IM op\_return. Since the IM op\_return is signed by Bob's secret key, it can be verified the message comes from Bob.