



AMENDED CLAIM SET (TRACKED CHANGES VERSION)

(Amendments shown as underlined text; deletions shown as struck-through text)

We claim:

1. A data communication system for a local network comprising at least one network node and a plurality of network devices associated with the at least one network node, characterized in that:

(i) the at least one network node is operable to provide a network node service to a plurality of clients or bots executing on the plurality of network devices, wherein individual clients or bots of the plurality of clients or bots are communicably and only programmatically coupled around the network node service in a programmatic star configuration to create a local network, further wherein the network node service is operable to validate and authenticate local services provided by clients or bots within the local network;

(ii) a source client or bot is operable to communicate data together with metadata to one or more destination clients or bots within the local network in real time or near real time, by relaying the data through the network node service; and

(iii) the source client or bot is operable to encrypt information content of the data prior to communicating the data to the one or more destination clients or bots, wherein the source client or bot is operable to employ a key store to encrypt the information content of the data, the key store being associated with an owner of the source client or bot,

wherein the metadata comprises:



- encryption information indicative of a unique identifier (ID) of the key store and a key index of a key material to be derived from the key store for subsequent decryption of the encrypted information content of the data, and

- group information indicative of the one or more destination clients or bots to which the data is to be communicated, wherein the source client or bot and the one or more destination clients or bots together form a group.

2. A data communication system of claim 1, characterized in that the at least one network node comprises at least a first network node and a second network node, and wherein the plurality of network devices comprise a first set of network devices associated with the first network node, and a second set of network devices associated with the second network node, wherein:

(iv) the first network node is operable to provide a first network node service to a first set of clients or bots executing on the first set of network devices, and the second network node is operable to provide a second network node service to a second set of clients or bots executing on the second set of network devices, wherein individual clients or bots of the first set of clients or bots are communicably and only programmatically coupled around the first network node service in a programmatic star configuration to create a first local network, and individual clients or bots of the second set of clients or bots are communicably and only programmatically coupled around the second network node service in a programmatic star configuration to create a second local network, further wherein the first and second network node services are operable to validate and authenticate local services provided by clients or bots within their own local network;

(v) when a given source client or bot is operable to communicate data to a given destination client or bot within a same local network in real time or near real time,



the data to be communicated is relayed through their associated network node service within the same local network; and

(vi) when a given source client or bot is operable to communicate data to a given destination client or bot from a different local network in real time or near real time, the data to be communicated is relayed through a network node service associated with the given source client or bot and through a network node service associated with the given destination client or bot.

~~3. A data communication system of claim 1 or 2, characterized in that the source client or bot is operable to communicate metadata together with the data, wherein the metadata comprises encryption information indicative of a unique identifier (ID) of the key store and a key index of a key material to be derived from the key store for subsequent decryption of the encrypted information content.~~

~~4. A data communication system of claim 3, characterized in that the metadata further comprises group information indicative of the one or more destination clients or bots to which the data is to be communicated, wherein the source client or bot and the one or more destination clients or bots together form a group.~~

53. A data communication system of claim ~~3-1~~ or ~~42~~, characterized in that the metadata is communicated in an unencrypted form.

64. A data communication system of claim ~~3-1~~ or ~~42~~, characterized in that the metadata is communicated in an encrypted form.

75. A data communication system of any one of claims 1 to ~~64~~, characterized in that the data communication system is operable to utilize one or more data communication networks existing in the first and second local networks for data communication.



86. A data communication system of any one of claims 1 to 75, characterized in that the data communication system is operable to register, with a registration service, services provided by the clients or bots of the first and second local networks.

97. A data communication system of claim 86, characterized in that the data communication system is operable to register, with the registration service, a given service provided by a given client or bot as a private service or a public service in respect of an owner of the given client or bot.

~~108~~. A data communication system of any one of claims 1 to 97, characterized in that a given local network is created in a dynamic manner.

~~119~~. A method of communicating data, via a data communication system for a local network comprising at least one network node and a plurality of network devices associated with the at least one network node, characterized in that the method comprises:

(i) operating the at least one network node to provide a network node service to a plurality of clients or bots executing on the plurality of network devices, wherein individual clients or bots of the plurality of clients or bots are communicably and only programmatically coupled around the network node service in a programmatic star configuration to create the local network, further wherein the network node service is operable to validate and authenticate local services provided by clients or bots within the local network;

(ii) operating a source client or bot to communicate data together with metadata to one or more destination clients or bots within the local network in real time or near real time, by relaying the data through the network node service; and



(iii) operating the source client or bot to encrypt information content of the data prior to communicating the data to the one or more destination clients or bots, wherein a key store is employed to encrypt the information content of the data, the key store being associated with an owner of the source client or bot,

wherein the metadata comprises:

- encryption information indicative of a unique identifier (ID) of the key store and a key index of a key material to be derived from the key store for subsequent decryption of the encrypted information content of the data, and

- group information indicative of the one or more destination clients or bots to which the data is to be communicated, wherein the source client or bot and the one or more destination clients or bots together form a group.

4210. A method of claim 419, characterized in that the at least one network node comprises at least a first network node and a second network node, and the plurality of network devices comprise a first set of network devices associated with the first network node, and a second set of network devices associated with the second network node, wherein the method comprises:

(iv) operating the first network node to provide a first network node service to a first set of clients or bots executing on the first set of network devices, and operating the second network node to provide a second network node service to a second set of clients or bots executing on the second set of network devices, wherein individual clients or bots of the first set of clients or bots are communicably and only programmatically coupled around the first network node service in a programmatic star configuration to create a first local network, and individual clients or bots of the second set of clients or bots are communicably and only programmatically coupled around the second network node service in a programmatic star configuration to create a second local network, further wherein



the first and second network node services are operable to validate and authenticate local services provided by clients or bots within their own local network;

(v) when a given source client or bot and a given destination client or bot are from within a same local network, relaying data to be communicated, in real time or near real time, through their associated network node service within the same local network; and

(vi) when a given source client or bot and a given destination client or bot are from a different local network, relaying data to be communicated, in real time or near real time, through a network node service associated with the given source client or bot and through a network node service associated with the given destination client or bot.

~~13. A method of claim 11 or 12, characterized in that the method further comprises operating the source client or bot to communicate metadata together with the data, wherein the metadata comprises encryption information indicative of a unique identifier (ID) of the key store and a key index of a key material to be derived from the key store for subsequent decryption of the encrypted information content.~~

~~14. A method of claim 13, characterized in that the metadata further comprises group information indicative of the one or more destination clients or bots to which the data is to be communicated, wherein the source client or bot and the one or more destination clients or bots together form a group.~~

~~15~~11. A method of claim ~~13~~9 or ~~14~~10, characterized in that the metadata is communicated in an unencrypted form.



~~16~~12. A method of claim ~~13~~9 or ~~14~~10, characterized in that the metadata is communicated in an encrypted form.

~~17~~13. A method of any one of claims ~~12~~10 to ~~16~~12, characterized in that the method further comprises operating the data communication system to utilize one or more data communication networks existing in the first and second local networks for data communication.

~~18~~14. A method of any one of claims ~~11~~9 to ~~17~~13, characterized in that the method further comprises operating the data communication system to register, with a registration service, services provided by the clients or bots of the first and second local networks.

~~19~~15. A method of claim ~~18~~14, characterized in that the method further comprises operating the data communication system to register, with the registration service, a given service provided by a given client or bot as a private service or a public service in respect of an owner of the given client or bot.

~~20~~16. A method of any one of claims ~~11~~9 to ~~19~~15, characterized in that the method further comprises creating a given local network in a dynamic manner.

~~21~~17. A computer program product comprising a non-transitory computer-readable storage medium having computer-readable instructions stored thereon, the computer-readable instructions being executable by a computerized device comprising processing hardware to execute a method as claimed in any one of claims ~~11~~9 to ~~20~~16.