The BFT service must be made available over all of the networks and sub-networks in a same geographical area, i.e. such a position message must be received by the nodes in a geographical neighborhood of the transmitting node, whether they are part of the same network as that transmitting node or another network.

Traditionally, any message or packet that must be broadcast from one network to another is done via at least one inter-network node. In the case of a BFT message, such processing also applies, since the current state of the art does not use geographical information to filter the broadcast. Thus, the positions of the nodes of a network are transmitted from one network to all of the nodes of another network by means of at least one specific node, called gateway node. This generates a significant burden on the radio networks, in particular their ad hoc networks, since each position update for a node gives rise to a message that must be communicated to all of the nodes of the other network, by means of the gateway node(s), in the absence of filtering.

As a result of these burden issues, it is not possible to provide a global BFT service in a zone where a large number (e.g. 50 to 100 nodes per network) of nodes of distinct networks are deployed, the radio coverage zones of each network being able to at least partially overlap or be adjacent.

There is therefore a need for a solution that makes it possible to establish a Blue Force Tracking service taking into account:

- this heterogeneity of the radio communication means, giving rise to the impossibility for a node of systematically receiving the position of an adjacent node within the geographical meaning using different communication means,

- the impossibility of proceeding with the systematic broadcast (said to be "by flooding") of the positions between the different elementary networks, which causes overload problems on the most stressed networks in terms of bandwidth (i.e., broadcast of a BFT message every 10 seconds by each of 200 nodes in a network with less than 2 kb/s to be shared by all of the participants).

Embodiments of t~~T~~he present invention aim~~s~~ to propose such a solution.

~~To that end, a~~According to a first aspect~~,~~ of the invention ~~proposes~~, there is provided a communication method between a first and second distinct ad hoc network with radio communication nodes ~~as described above~~, said networks being connected by a gateway system, the gateway system comprising first telecommunications means with at least one first node of the first network and second telecommunications means with a second node of the second network, the nodes being equipped with radio communication means and geographic location means, the method being characterized in that it comprises the following steps:

a/ collecting first, second, respectively, geographical location information for the first, second, respectively, network nodes, said information being determined and transmitted by said nodes;

b/ deducing a first, second, respectively, geographical coverage area of the first, second, respectively, network as a function of first, second, respectively, geographical location information;

c/ determining an intersection zone of the first and second geographical coverage areas;

d/ identifying, as a function of the first, second, respectively, collected location information, nodes of the first, second network, respectively, located inside said intersection zone;

e/ sending said identified nodes of the first network, from the gateway system and by means of said first node, data indicating the collected geographical locations of the identified nodes of the second network.

In embodiments, the invention also has one or more of the following features:

- the method also comprises the following step:

f/ sending said identified nodes of the second network, from the gateway system, by means of said second node, data indicating the collected geographical locations of the identified nodes of the first network;

- the first network and/or the second network is an ad hoc radio communication network;

- some of the steps a/ to d/, or all of the steps a/ to d/, are carried out by ad hoc radio communication nodes;

- some of the steps a/ to d/, or all of the steps a/ to d/, are carried out by the gateway system;

- the data indicating the collected geographical locations of the identified nodes is accompanied by identification data for said identified nodes and/or a time indication relative to the location;

- at least steps a/ to d/ are regularly reiterated following the transmission by the nodes of updated location information;

if in step c/ it is determined that the first and second geographical coverage areas do not include intersection zones, a distance between the first and second geographical coverage areas is computed, and an update period for the geographical location of the nodes is determined as a function at least of said computed distance.

According to a second aspect~~,~~ of the invention, there is provided~~proposes~~ a processing module adapted to operate in a communication system including a first network of radio communication nodes connected by a gateway system to a second, distinct network of radio communication nodes, the gateway system comprising first telecommunications means with at least one first node of the first network and second telecommunications

means with a second node of the second network, the nodes being equipped with radio communication means and geographical location means,

the processing module being characterized in that it is adapted to collect first geographical location information for the nodes of the first network, said information being determined and transmitted by said nodes, and to deduce therefrom a first geographical coverage area of said first network;

the processing module is also adapted to determine an intersection zone between said first geographical coverage area and a second coverage area of the second network and to identify, as a function of the first collected location information, nodes of the first network located inside said intersection zone;

the processing module being adapted to receive data coming from the gateway system and indicating the geographical locations at least of nodes of the second network that are identified as located in the intersection zone and to transmit to said identified nodes, of the first network, by means of said first node, said data indicating the collected geographical locations of the identified nodes of the second network.

According to a third aspect~~,~~ of the invention ~~proposes~~, there is provided a transceiver station adapted to form a node of the ad hoc network and including a processing module according to the second aspect of the invention.

According to a fourth aspect~~,~~ of the invention ~~proposes~~, there is provided a computer program intended for a radiofrequency transceiver station, adapted to form a node of the network, said program comprising instructions for updating the following steps when the program is run by the processing means of said station:

- collecting first geographical location information of the nodes of a first network to which the station belongs, said information being determined and transmitted by said nodes, and deducing a first geographical coverage area of the first network therefrom;
- determining an intersection zone between said first geographical coverage area and a second coverage area of a second network distinct from the first network and identifying, as a function of the first collected location information, nodes of the first network located inside said intersection zone;
- receiving data indicating geographical locations at least of nodes of the second network identified as located in the intersection zone and transmitting, to said identified nodes of the first network, said data indicating the collected geographical locations of the identified nodes of the second network.

Other features and advantages of the invention will appear upon reading the following description. This description is purely illustrative and must be read in light of the appended drawings, in which: