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Appendix – A: Questionnaire for MANCAF developer testing

<table>
<thead>
<tr>
<th>Part 1: Background and Experiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. For how many years have you been developing software?</td>
</tr>
<tr>
<td>2. Describe your programming skills:</td>
</tr>
<tr>
<td>(1) Expert</td>
</tr>
<tr>
<td>(2) Good</td>
</tr>
<tr>
<td>(3) Intermediate</td>
</tr>
<tr>
<td>(4) Poor</td>
</tr>
<tr>
<td>(5) None</td>
</tr>
<tr>
<td>3. For how many years have you been developing software with Java?</td>
</tr>
<tr>
<td>4. Describe your Java skills.</td>
</tr>
<tr>
<td>(1) Expert</td>
</tr>
<tr>
<td>(2) Good</td>
</tr>
<tr>
<td>(3) Intermediate</td>
</tr>
<tr>
<td>(4) Poor</td>
</tr>
<tr>
<td>(5) None</td>
</tr>
<tr>
<td>5. Have you ever developed a mobile application before?</td>
</tr>
<tr>
<td>Yes or No</td>
</tr>
<tr>
<td>6. Have you ever developed a Bluetooth application?</td>
</tr>
<tr>
<td>Yes or No</td>
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</tbody>
</table>
## Part 2: The Framework Concepts

<table>
<thead>
<tr>
<th></th>
<th>It is easy to understand the Domain part of MANCAF framework</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[1]. Completely agree</td>
</tr>
<tr>
<td></td>
<td>[2]. Agree</td>
</tr>
<tr>
<td></td>
<td>[3]. Neutral</td>
</tr>
<tr>
<td></td>
<td>[4]. Disagree</td>
</tr>
<tr>
<td></td>
<td>[5]. Completely disagree</td>
</tr>
</tbody>
</table>

<table>
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<tr>
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<td>[1]. Completely agree</td>
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<td>[2]. Agree</td>
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<td></td>
<td>[3]. Neutral</td>
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<tr>
<td></td>
<td>[4]. Disagree</td>
</tr>
<tr>
<td></td>
<td>[5]. Completely disagree</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>It is easy to understand the Message part of MANCAF framework</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>[1]. Completely agree</td>
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<tr>
<td></td>
<td>[2]. Agree</td>
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<tr>
<td></td>
<td>[3]. Neutral</td>
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<tr>
<td></td>
<td>[4]. Disagree</td>
</tr>
<tr>
<td></td>
<td>[5]. Completely disagree</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>It is easy to understand the Network part of MANCAF framework</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>[1]. Completely agree</td>
</tr>
<tr>
<td></td>
<td>[2]. Agree</td>
</tr>
<tr>
<td></td>
<td>[3]. Neutral</td>
</tr>
<tr>
<td></td>
<td>[4]. Disagree</td>
</tr>
<tr>
<td></td>
<td>[5]. Completely disagree</td>
</tr>
</tbody>
</table>
5. It is easy to understand the Group part of MANCAF framework

[1]. Completely agree
[2]. Agree
[3]. Neutral
[4]. Disagree
[5]. Completely disagree

### Part 3: The Exercise

1. What do you think was the most difficult part of the exercise?
   - Preparing the Framework
   - Searching for Other Devices
   - Monitoring the Group
   - Sending a Message
   - Receiving a Message
   - When Something Goes Wrong

2. What was the most time consuming part of the exercise for you?
   - Preparing the Framework
   - Searching for Other Devices
   - Monitoring the Group
   - Sending a Message
   - Receiving a Message
   - When Something Goes Wrong

### Part 4: Summary

1. MANCAF will make the application development process faster.

[1]. Completely agree
[2]. Agree
[3]. Neutral
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[4]. Disagree&lt;br&gt;[5]. Completely disagree</td>
</tr>
<tr>
<td>2.</td>
<td>MANCAF covers the domain of collaborative application for mobile devices.&lt;br&gt;[1]. Completely agree&lt;br&gt;[2]. Agree&lt;br&gt;[3]. Neutral&lt;br&gt;[4]. Disagree&lt;br&gt;[5]. Completely disagree</td>
</tr>
<tr>
<td>3.</td>
<td>Do you have any other comments, criticisms or suggestions?</td>
</tr>
</tbody>
</table>
Appendix – B: Exercise for Development testing session

This exercise gives developers practice in writing applications with the MANCAF framework. At the end of this exercise, you will have written a very simple chat application that can connect several devices to a network and allow each device’s user to communicate.

For this exercise, we have prepared an almost complete application which only misses the code for network communication and framework infrastructure.

Part 1: Initializing framework

The first thing we'll have to do is to initialize the framework. In our example application, the framework should be initialized after the user has pressed the “OK” button in the registration form. Create the necessary instance variables and instantiate and initialize the framework. This should be done at the start of the ready method. When preparing the framework, remember to create the service and register it with the framework.

Part 2: Searching the nearby devices

After the framework has been initialized, other devices running the same service has to be located. This can be done by starting a group search. Before starting the search, be sure to create a new Group and set its service and add the group to the service. When a device is discovered, the slave device is notified through the groupDiscovered method. The slave device should automatically join the discovered group.

Part 3: Managing Group

Once a node has joined a group it should register a group monitor that can be notified of changes in the group, such as nodes leaving or joining, etc. For now, we will settle on implementing the notifyaboutfoundnode method.
Part 4: Sending Message

The available code already has a text field where the user can enter messages that can be sent to the other nodes in the group. The next thing we have to do is get this text, wrap it in a message and send it.

Part 5: Receiving Message

Sending messages does not do much good if no one reads them. The next method to fix is the messageReceived method defined by the MessageSubscriber interface.