# SCC.204 Requirements Workshop

Mary’s smart home

Mary is a widow. She is 65 years old, overweight and has high blood pressure and cholesterol levels. Mary gets a new intelligent fridge. It comes with 4 temperature and 2 humidity sensors and is able to read, store, and communicate RFID information on food packages. The fridge communicates with a smart home control system in the house and integrates itself. In particular, it detects the presence of spoiled food and discovers and receives a diet plan to be monitored based on what food items Mary is consuming. An important part of Mary's diet is to ensure minimum liquid intake. The intelligent fridge monitors Mary’s liquid consumption and notifies the emergency services in case the liquid intake consistently falls below a minimum threshold.

There are a number of stakeholders interested in the development and smooth running of healthcare smart homes (SHS):

* Age Concern representative (AC) who represents Mary and others like her. AC must best represent Mary’s desires and concerns.
* Government health committee member (GHC): a government representative well versed in NHS procedures and policies whose chief role is to ensure that NHS practices are being abided by.
* System Developer (SD): a system developer who knows about smart home technologies and how much they cost etc. SD’s role is to suggest possible technologies and keep the team grounded in reality.
* Smart home builder (SHB) representing the company building the smart homes or retrofitting existing homes

Task:

1) For EACH stakeholder, write down THREE requirements for the SHS, in the form of SHALL statements. Each set of requirements should be written from the perspective of the chosen stakeholder. Your requirements should (a) avoid including design details; (b) avoid vague requirements such as “the system should be secure”. For each requirement identified above, state whether it is a functional or non-functional requirement.

Stakeholder:\_\_\_\_\_\_\_\_\_\_\_\_\_AC\_\_\_\_\_\_\_

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| --- | --- | --- |
| ID | Description | FR / NFR |
| R.1 | The system shall monitor the user’ diet. | FR |
| R.2 | The system shall operate during the day. | NFR |
| R.3 | The system shall implement user privacy provisions as set out in the standard regulation. | NFR |

Stakeholder:\_\_\_\_\_\_\_\_\_GHC\_\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- |
| ID | Description | FR / NFR |
| R.1 | The system shall record and store the data of diet. | FR |
| R.2 | The system shall notify the doctor if the user is unwell. | FR |
| R.3 | The system shall not make any mistakes. | NFR |

Stakeholder:\_\_\_\_\_\_\_\_\_SD\_\_\_\_\_\_\_\_\_\_\_

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| ID | Description | FR / NFR |
| R.1 | The system shall able to withstand hacker attack. | NFR |
| R.2 | The system shall calculate the user’s daily energy intake and expenditure. | FR |
| R.3 | The system shall connect to the user’s phone and send same-day feedback. | FR |

Stakeholder:\_\_\_\_\_\_\_\_\_\_SHB\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- |
| ID | Description | FR / NFR |
| R.1 | The system should accept data from all electronic devices and manage these devices. | FR |
| R.2 | The system shall ensure the data transfer delay is below 0.1s. | NFR |
| R.3 | The system shall be able to check all electron devices are working properly. | FR |

2) Identify any potential conflicts between requirements from different stakeholders. Suggest how you might resolve these conflicts.

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| --- | --- | --- |
| Involved stakeholders | Conflicting requirements | Resolution |
| AC  SD | AC asks to use smart phone to connect with the system.  SD designs to use computer to connect with the system. | Providing both two ways. |
| AC  SD | AC asks to open the system during the day.  SD designs to open the system all day. | Opening the system all day. |