

# Appendix 2 – Initial Requirements List

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## ***Stealing food***

- Thumbprint locks on cupboards
  - > 1second to log in
- Key slot in case of failure/power cut
- Capability to add up to 10 users per cupboard
- Database for cupboard to be stored centrally
- Scanner to be less than 200 mm<sup>2</sup>
- Capability for up to 4 'master' thumbprints

## ***Hob***

- Set hob power and timings for auto start.
- Capability for auto-cook.
- Detect 'boiling over' and adjust heat accordingly.
- System must finish cooking each hob at the same time
- Push alarm to Bluetooth device when cooking complete
- Capability to 'understand' recipes key words to automatically cook
- Connect with 'smart pan' to record temperatures
- Touch pad interface to set times and temperature (5 'clicks')
- Include timers, hob select, food choice, food preference (e.g. carrots, soft)
- Auto smoke detector and extractor fan strength
- Include Self-Cleaning pans.

## ***Oven***

- Detect burning successfully 95% of the time
- Push alarm to Bluetooth device e.g. phone
- Autotimer
- Adjust time automatically for cooking/warming
- Touch screen interface
- Set temperature and time with 5 'clicks'
- Select food/weight for perfect cooking (e.g. chicken, whole, 1.25kg)
- Dirt detection to self-clean

## ***Interface***

- Thumb scanner 'log in'
- Touch screen
- Internet capability

- Secure connection to devices
- Watch videos
- Inbuilt to surfaces
- Auto find recipe for meal
- Option to navigate found recipes
- 100% water proof
- Work separately from other interfaces
- Work simultaneously with other interfaces
- Ability to control each appliances
- Can be used on smart devices

### ***Safety***

- Smart smoke alarm
- Push notifications to device of warnings
- Assess levels of threat
- Override control of appliances (e.g. shutdown oven, power on extractor fan)

### ***Shopping***

- Weighted fridge/shelves
- Barcode scanner around frame of shelf
- Automatically detect food removed
- Push to shopping list what food is used
- Scales must be sensitive to <1gram
- Automatically detect 'Miscellaneous items'
- Detects food placed on shelves
- Opportunity to manually input items
- Shopping list pushed to device
- Display information on what food needs to be eaten in the next 2 days
- Display information on food to dispose of
- Provide approximate cost of shopping list
- Automatic price checker of shopping list
- One click removal of items on shopping list
- One click Add items to list
- Clear all items option

### ***Storage***

- Bar code reader detects 'use by dates'
- Provide list of what is in storage for each person
- Notification of defrosted food in fridge

- Recognise shelf for 'communal items'
- Provide record of who purchased communal items (by shopping list or who inputted)
- Thumbprint detector on fridge to record who opened it
- Automatically add to shopping list who's turn it is to purchase communal items
- Auto detect freezer to fridge defrost
- Scan barcode on receipt of shopping to know what food to 'expect'

### ***Dietary Requirements***

- Register information on calorie intake per meal
- Provide Charts on calories being cooked
- Provide warnings on food content (nuts, lactose etc)

### ***Maintenance***

- Status of appliances
- Constant 'Sleep' mode
- 'Wake' in <1 second
- Holiday mode

### ***Mess***

- Detect mess on pans to self-clean using heat
- Option to remove to manually clean
- Sensors on bins to indicate when full
- Provide cleaning rota
- Food disposal

### ***Interactive surfaces***

- Scratch proof surfaces
- Heat proof surfaces
- Full touch screen
- Import from smaller interfaces
- Rescale to entire surface
- Interactive games

### ***Voice activation***

- Voice activated appliances
- Recognise all accents
- <1 second reaction time to instructions

### ***Central Interface***

- Thumb scanner 'log in'
- Administrator has access to everything
- Control temperature of kitchen
- Individual information pages
- Information on individual on the last 10 meals
- Total spend on food
- Display Average spend per week
- average spend per month
- average spend per day
- Timestamp for last ten openings of storage devices
- Record processes of manually made meals
- Meal planner for a set time
- Monitor electricity usage
- Monitor water usage
- Monitor gas usage

### ***Taps***

- Voice controlled
- Recognise required quantities (e.g. "one cup of tea = 300ml")
- Recognise heat (e.g. "tea" = 90°C)
- Switch between hot and cold instantly
- Distribute required quantities
- Touch controlled heat