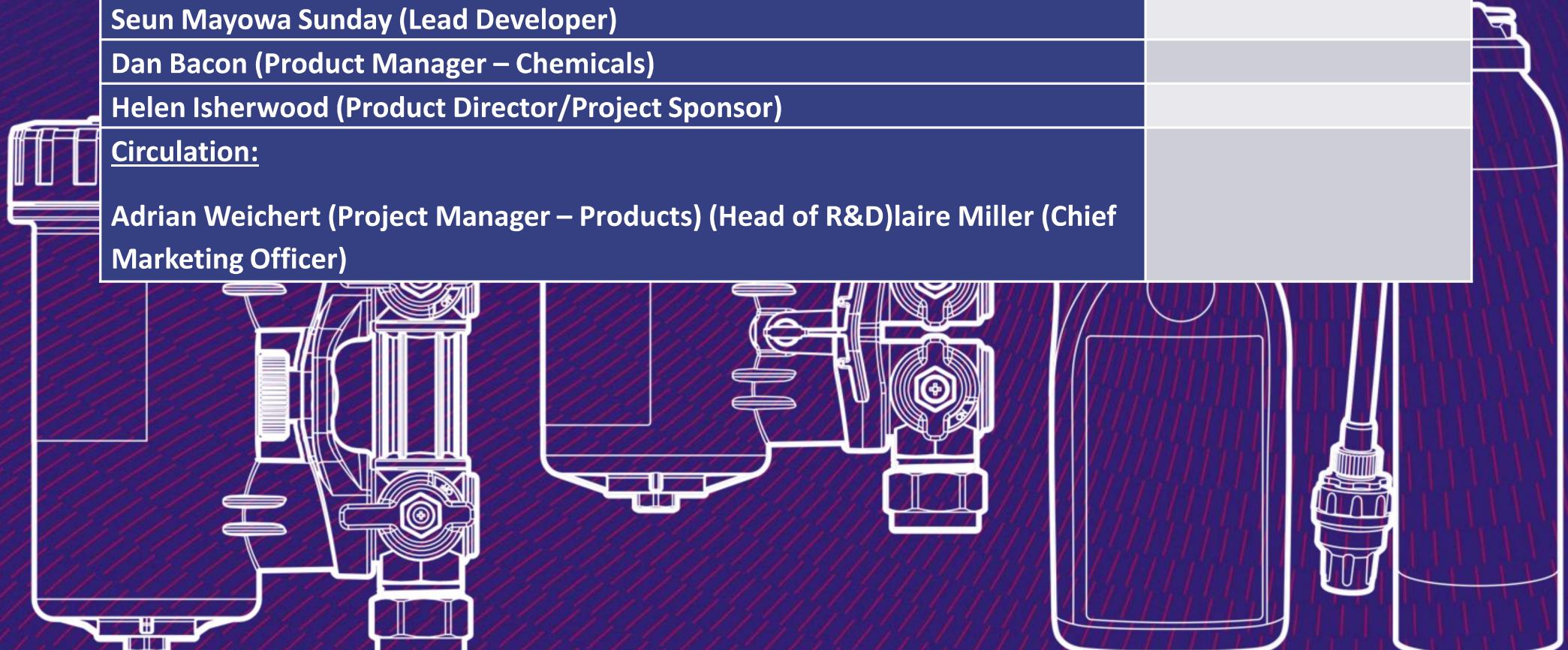


New Sense App Specification V2.1

Adey Product Specification Approval	Date
Charlotte Dixon (Marketing Manager)	
Chris Duke (Product Manager – Domestic Filters)	
Hayley Knight (Senior Graphic Designer – Studio Manager)	
Seun Mayowa Sunday (Lead Developer)	
Dan Bacon (Product Manager – Chemicals)	
Helen Isherwood (Product Director/Project Sponsor)	
<u>Circulation:</u>	
Adrian Weichert (Project Manager – Products) (Head of R&D) Laire Miller (Chief Marketing Officer)	



Contents

1. Title Page
2. Contents
3. Revision Control
4. Sense App Phase 1: Background
5. App Phase 1: Requirement Overview
6. App Phase 1: Requirement
7. App Phase 1: Requirement continued
8. App Phase 1: Product Specification
9. App Phase 1: Product Specification continued
10. App Features & Benefits
11. App Features & Benefits continued
12. Data Transfer Requirements
13. App Source Code/API/Database
14. Login Process
15. Sense Product Setup Process Overview
16. Product Connection Process – 2D Barcode Scanning
17. Product Connection Process – Location
18. Product Connection Process – Installation Type
19. Product Connection Process – Wi-Fi Setup
20. Product Connection Process – Connect to Wi-Fi
21. Product Connection Process – Connect to Filter
22. Product Connection Process – Connect to Filter continued
23. Product Connection Process – Product Owner Details
24. Product Connection Process – System Details
25. Product Connection Process – ADEY Best Practice
26. Product Connection Process – Finish Setup/Warranty Registration
27. Product Connection Process – Cellular Setup
28. Product Connection Process – Cellular Setup Continued
29. Product Connection Process – Cellular Product – Post GSM Setup
30. Product Reset (Wi-Fi) – Factory Reset
31. Product Overview - Sense Home Page – App Top Level Dashboard
32. Product Overview - Product (or Property?) – Details Page Pro3 & Micro3
33. Product Overview - Product (or Property?) – Details Page ChemSense
34. App Menu – Menu Page
35. Next Steps/Discussion Points
36. Thesaurus

Sense App Phase 1: Background

Background

- ADEY was founded in 2003, and created the UK market for magnetic filters for heating systems. The core product offering has been expanded in that time to include MagnaCleanse (flushing system), additional domestic and commercial filters (adey.com), a range of chemicals launched in 2013 (with c25% market share to date) and scale reducers in 2016.
- ADEY continues to lead the filter market, with approximately a 69% share. The growth challenge, therefore, is not about increasing market share, but about **growing the market itself**.
- Of the 1.6 million boilers installed each year, roughly 55% (900,000) have filters installed with them.
- Of the installed base of boilers (c. 23.6 million households), about 15% (3.6 million) have filters, 3 million of which are ADEY – as such, this presents the greatest opportunity for growth through **retrofit & SMART Technology**.
- ADEY released the MagnaClean Professional3 Sense Wi-Fi enabled Product in January 2019 creating the first connected filter for the UK central heating market.

Growth Strategy:

- One of ADEY'S strategic imperatives have been identified to support the growth of Smart Technology through a range of connected Products. The next key step is to expand upon the initial Professional3 Sense filter offering a range extension to include a smaller, connected filter & a Chemical Sensing device expanding upon the original product remit:
 - **To produce a Magnetic Particle Capture Filter that has the ability to record the Capture rate over time & store this data remotely via an API/Database.**
- The new Sense Product range will require a New ADEY App to sit independently to the existing ProClub App/Web-based Portal enabling Contract accounts to set up & manage Product Stock accordingly on a Property basis. Whilst this expands ADEY's SMART Technology offering, the Products will allow the ability of monitoring System Health at a Property level which has great Commercial appeal to larger organisations where effective CHS monitoring can provide preventative maintenance & ultimately reduce the cost to serve. The Products will connect to the ADEY Server/Database using Wi-Fi or GSM Cellular connectivity. Therefore the App needs to support provisioning of both types of Comms Protocol.
- There will need to update the existing HomeZone App to allow Homeowners the ability to monitor their own CHS based upon the ADEY Products connected (Separate App Update Specification to follow).

App Phase 1: Requirement Overview

1. ADEY needs a comprehensive platform to allow the Sense range of Products to connect to either a Homeowner's Wi-Fi router OR to an independent Cellular GSM comms protocol. This will enable the data transfer of readings collated by the Sense Products to be recorded & stored by an Adey API/Database. This will provide an effective communication tool to Organisations & Installers to manage Boiler Servicing & Predictive maintenance using SMART technology, interfacing via a Mobile Phone Device App - **iOS & Android** compatible.
2. The phase 1 development of the App will establish the connection of the 3 key Product offerings, namely ChemSense, Micro3 Sense & Pro3 Sense to the Adey API & provide a point of communication to interact with the Installer or Organisation to effectively manage their housing stock. Phase 1 will focus upon the creation of the New 'Sense' App to provide the ability to connect/provision Products & view the Property status of the associated CHS. **The phase 1 development needs to take into consideration later phases, set out in the document to provision for the stand alone App to be translated into different languages. The opportunity to increase housing stock (>100 Products) to cater for Commercial or Social Housing requirements must also be available at this phase.**
3. The App needs to support the ProClub/ADEY Installers' Club initiative and facilitate easy warranty upload for independent Installers, whilst providing Commercial Organisations the ability to connect/monitor Property Central Heating Systems on a Contract level where Installer Reward Points are not applicable.
4. Phase 1 will be primarily focussed on providing installers with the ability to set up the Filter to the Homeowner's Wi-Fi router OR to a Cellular GSM network & register warranty (linking to existing ADEY ProClub accounts where applicable or to Organisations created by ADEY).
5. The App must follow the Adey Brand guidelines & align aesthetically to the ProClub App. However the App needs to be designed to allow a 'White Label' version to be available as an option to large Organisations.
6. **The ChemSense & MagnaClean Micro3 Sense Product Launches are Scheduled for July 2020.** The App (iOS & Android Platforms) needs to be available in a completed state to accompany the Product Launch & include completion of all test & validation criteria.
7. The App will require an ongoing SLA (Service Level Agreement) in order to support any identified bugs post launch & to support ongoing software functional updates at later phases.

Note: Additional, phased updates will be Specified & therefore quoted separately to this Phase 1 Brief.

App Phase 1: Requirement

Requirement	Comment
Log in / Register	Incorporate ProClub style login for Independent Installers. Organisations to be invited by ADEY Admin via a New Admin Portal.
T&Cs for Installer & Homeowner	To be supplied by Adey Legal.
Home Screen	To Display Property CHS Health (1 st line of Address/Postcode, Top Level 'Traffic Light' Health Status & Connectivity Confirmation). Scrollable if Stock exceeds screen size.
Main Menu	Sense Home, Add Product, Reconnect to Wi-Fi/GSM (if applicable), Property Stock, Service Records (Improved ProClub App functionality), Access Warranties, Profile, Rewards (Independent Installers only), Factory Reset (Pro3 Sense only?), How to Guides (e.g. How to Clean a Filter), User Guide, Connection/Troubleshooting Videos, Contact Adey.
Add a New Product	Product Name, Serial No., MAC Address (Wi-Fi), IMEI No. (GSM), Location, System Details, Homeowner Details
Homeowner T&Cs	To be supplied by Adey Legal – Update based on existing ProClub T&Cs
GDPR for Installer & Homeowner	To be advised by External Legal & supplied by Adey Legal/Project Team – Update based upon existing ProClub T&Cs
Register a Warranty	Serial No. - Method 1: Extract Serial No. from Electronic Device; Method 2: 2D Barcode scan; Method 3: Manual Input. Warranty to be sent from Phone Device: Immediately if signal available or Cached & sent when Installer Phone has a signal. Note: Existing Issue within ProClub App (29/10/19) – needs to be resolved.
Product connection to Wi-Fi Router	Product Device will enter an 'Access Point' mode (e.g. like Sonos Speaker System) to host connection set up only for Wi-Fi & GSM provisioning methods. Wi-Fi provisioning to request for phone to connect to Wi-Fi first, then connected to Product second in order to reduce the need for a lengthy Access Point Mode requirement (Currently 2 mins for Pro3 Sense).
Wi-Fi Set up	All Products: Scan Barcode to identify Product Type & Comms method required. Wi-Fi: Basic Set Up – Find 2.4 GHz Network only/Type in password.
GSM Set up	Advanced Set Up – To include IP address, Subnet Mask, Default Gateway & DNS (Test methods to be fully considered). GSM: As per Corintech Provisioning method – Activation of Sim TBD.
Pro3/Micro3 Only: Register a Clean Filter (Post Service)	Ability to restore Magnetite Capture Reading back to 0% after the Filter has been cleaned during a Service.
Pro3/Micro3 Only: Spot Check Filter (Not App Specific function)	Initiate a Magnetite Capture Reading in addition to an Automated Reading by pressing the button on the front of the Product. Not App specific: reading will be updated & sent to the API. The App will provide visual prompts & display an updated reading providing the phone device has a signal to receive.
Service Records (linked to ProClub App Functionality)	Linked to ProClub App functionality to log Servicing of Filter, System Cleaning & addition of Adey Chemicals added to the Central Heating System.
Warranty	Warranty Registration. Access to complete Filter Warranty & edit details if required. Note: Product Serial No. & Warranty Registration Date to not be editable

App Phase 1: Requirement continued....

Requirement	Comment
Profile (linked to ProClub functionality)	Installer Profile. Access to update & edit Installer details as per ProClub functionality.
Rewards (linked to ProClub) – Independent Installers Only	Linked to ProClub App Loyalty Rewards Functionality.
Support Materials	Access to Professional 3 Sense User Guides including links to Installation & Troubleshooting Videos. FAQ Section TBC.
Contact Adey	Click to Call or Email Adey Customer Services.

App Phase 1: Production Specification

Requirement	Comment
1.1 - App Aesthetic	App to be Adey Branded & be aligned aesthetically to the Adey ProClub (AIC) Application.
1.2 - Application Images	Refer to Wireframe Storyboards & existing ProClub App for aesthetic direction. To be discussed further between ADEY & Behold.
1.3 - Application Platform Compatibility	App to be Web-based & scalable across Android & IOS Phone platforms from 2015 onwards. The Product Device will enter an 'Access Point' mode allowing the Product to link to the Homeowner's Wi-Fi router via the App. The App can send Warranty Registration data to the Adey API at the next available Wi-Fi connection opportunity from the Installers phone device (Note: Existing loss of Warranty Reg. Info must be resolved – 29/10/19). The App will receive Product data updates via the Adey API.
1.4 - Application Functionality	App to Record, Store (cache) & Send the following Warranty Registration Inputs:
1.4.1	Installer's Details: Name (if registering for the 1st time) – Title, First & Last name , Email Address, Mobile Tel. No. Password Set up & confirmation, Gas Safe &/or OFTEC Reg. No., Company Name, Address, Tel. No. (Confirm No. of Digits per Field Req.) in accordance with the ProClub (AIC) APP.
1.4.2	Adey Installer Club Unique ID No. (Confirm No. of Digits Req. – Currently 6 Digits) in accordance with ProClub.
1.4.3	Time/Date of Warranty Registration to the nearest minute (TBC) – Format/No. of Digits per Field TBC. Need to agree if UTC OR GMT.
1.4.4	Product Serial No. (13 Digits Req.) – To include 1 Product Serial No. – Number transferred during set up. Ability to Scan 2D Barcode & Manual input of Serial No. essential to support initial identification & provisioning of Product.
1.4.5	Magnetite Capture Reading (Filters) – Current Product reading initiated by pressing Button on the Product: To the nearest 5% sent to ADEY Server. To the nearest 25% increment based on the device LED reading.
1.4.6	Property Owner's Details: Name - Title, First & Last name , Email Address, Tel. No., Address, (Confirm No. of Digits per Field Req.) in accordance with the ProClub App.
1.4.7	System Details: Contract or Independent (Contract Ref. No. Req. to be entered - Details TBC) To include No. of Radiators, Boiler Make, Boiler Serial No., System Type (Open or Closed – Important for Magnetite Capture Readings), Filter Installation for: Old System, New System, New Boiler or Replacement Filter (include approx. age of boiler) . Old Filter Brand e.g. Fernox. Is the System have a SMART Thermostat fitted e.g. Hive, Wave, Nest. Filter Replaced under warranty (Flag to ADEY CS Portal). (Confirm No. of Digits per Field Req.) in accordance with the ProClub (AIC) App. whilst catering for Professional 3 Sense Specifics.
1.4.8	Battery Level Status – Green, Amber, Red
1.4.9	Temperature Reading – Temp °C for launch. Data held by Adey Database purposes only (°F for USA – Phase 2/3?).

App Phase 1: Production Specification continued....

Requirement	Comment
1.4.10	Further Phase 2/Phase 3 future proof considerations. For example Language Translation considerations for Global Market (e.g. Phase 2: Europe – French, German, Norwegian; Phase 3 – USA). – Ensure the App can be customised for individual market requirements.
1.4.11	Recalibration – The Product will automatically recalibrate once the Magnetite has been removed from the filter during service, resetting the device/reading back to zero (0%). The App will also have the ability to reset the Capture rate reading back to 0% (& Send Clean Filter Alert) - manual process only prompted visually by the App.

App Features & Benefits

Product/App Benefits to Installer:

1. Products can accurately monitor Magnetite Capture (Filters) or Chemical levels (ChemSense) to the nearest 5% enabling the system to be Proactively monitored from a Total Productive Maintenance (TPM) perspective.
2. Alerts can be sent to the App or the Management Portal for the Installer &/or Organisation to be reminded of Annual Service Requirements (1 month's notice), Service recommendations, etc.
3. Advise the Installer &/or Organisation of the appropriate remedial action based on Magnetite Capture rate over time or the Inhibitor level.
4. Opportunity to build customer relationship/increase business through Annual Servicing with Adey Support for Independent Installers, whilst providing Property CHS Health monitoring to Organisations.
5. Ability to demonstrate to the customer the Magnetite capture rate through diagnostics to support visual capture upon the Magnet sheath itself.
6. Ability to demonstrate addition of Adey chemical Product range (e.g. Inhibitors) will prolong the life of the Boiler System.

App Features & Benefits continued....

Product/App Benefits to Adey:

1. Market Leaders in terms of innovation, bringing Products with the GSM/Cellular & Wi-Fi Connectivity to monitor CHS Health at a Property level.
2. First & Biggest Market Research Opportunity to monitor the Magnetite Capture Rate (filters) &/or Inhibitor levels (ChemSense) over Time across a diverse range of Properties & Central Heating Systems. Geolocation data can be correlated to hard/soft water areas, identify Boiler Manufacturer, SMART Thermostat type (if applicable) & Open Vent/Sealed System Data.
3. Incentivised approach to boost Sales - Promotional Tool aligned to the ProClub rewards scheme (Independent Installer). Ecommerce Opportunity can include Chemicals, Seals & Maintenance Spares. Annual Service Reminder will link into this (Sale of O Ring Spares, etc.).
4. Ability to provide Property CHS Heath monitoring Commercially to large organisations (Social Housing & Utilities Providers).

Data Transfer Requirements

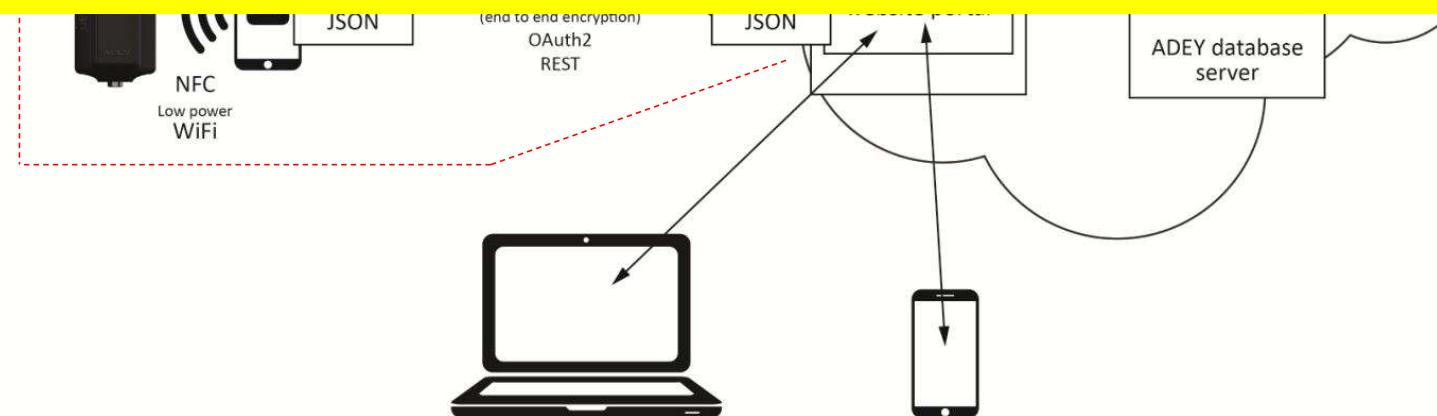
- The Product Device will enter an 'Access Point' mode creating a temporary Wi-Fi Network link to the Mobile Phone Device enabling the MagnaClean Professional 3 Sense Product to connect to the Homeowner's Router. The same connection method will apply for Android & iOS phone devices connecting to the Product via Low Power Wi-Fi. The Homeowner's password will not be retained by the App or the Mobile Phone Device & only be stored by the Product Device itself.
- The Product will send Magnetite Data Capture Readings & associated information via Homeowner's Router to Adey API using REST & HTTPS end to end encryption. This is a 2 way communication to enable the API to confirm/feedback to the Product that the Data has been received in the correct state.
- The API will transfer data from the database to the App using REST & HTTPS end to end encryption.

Note: A Restful API will be produced by Adey to allow access to the existing database. The API and database will be extended as needed during development and may deviate from pure REST if needed to support the Application and devices.

- Further Note: Parser Required to convert Device Firmware from HTML to HTTPS to communicate with App as per Pro3 Sense Product.



PLACEHOLDER – CONFIRM REQUIREMENTS WITH BEHOLD BASED UPON
DELOITTE INFRASTRUCTURE REPORT
TO ALSO INCLUDE GSM COMMS METHODOLOGY



App Source Code & API/Database

App Source Code

- Example App source code to be supplied by Corintech to support Really B2B App development.
- To include User Interface & Visual elements for reference.
- Example source code to be used as reference by Behold only.
- Note: The MagSense App must not appear visually similar to the Corintech/Files ‘ThruTheAir’ App in any way.
- NDA to be signed by Corintech & Behold to enable the ‘ThruTheAir’ App source code to be used for the development of the MagSense App.

PLACEHOLDER – CONFIRM REQUIREMENTS WITH BEHOLD BASED UPON DELOITTE INFRASTRUCTURE
REPORT

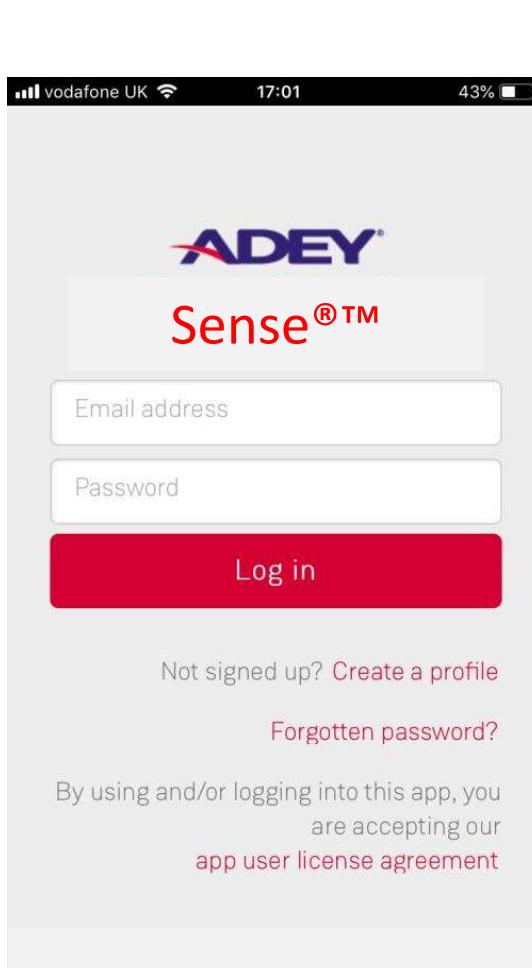
TO ALSO INCLUDE GSM COMMS METHODOLOGY

API/Database

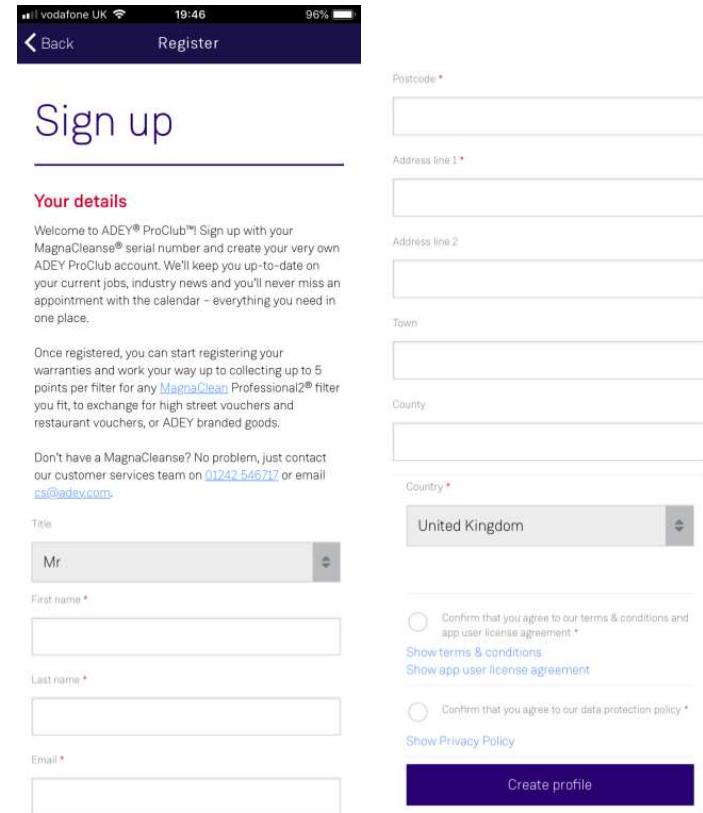
- API/Database to be designed & developed by Behold & Adey collaboratively based on Deloitte’s Infrastructure Report.
- Calls to be identified by System 15 & Adey with App specific requirements to be identified by Really B2B. Detail to be supplied to Really B2B in order to support App development.

Login Process

Login/Create a Profile – ADEY Sense App (Name TBC?)



The screenshot shows the ADEY Sense app's login screen. At the top, there are status icons for signal strength, battery level (43%), and time (17:01). Below this, the ADEY logo and "Sense®™" are displayed. There are two input fields: "Email address" and "Password". A large red "Log in" button is centered below them. To the right of the input fields, there are links for "Not signed up? Create a profile" and "Forgotten password?". At the bottom, a note states: "By using and/or logging into this app, you are accepting our app user license agreement".



The screenshot shows the ADEY Sense app's sign-up screen. At the top, there are status icons for signal strength, battery level (96%), and time (19:46). Below this, there is a "Back" button and a "Register" button. The main title is "Sign up". Under "Your details", there is a welcome message about the ADEY ProClub account. It also mentions that once registered, users can start registering warranties and work their way up to collecting up to 5 points per filter for any MagnaClean Professional2® filter you fit, to exchange for high street vouchers and restaurant vouchers, or ADEY branded goods. There is a link to contact customer services on 01242 546212 or email cs@adey.com. The form includes fields for "Title" (set to "Mr"), "First name", "Last name", "Email", and "Password". A note at the bottom states: "Your password must be at least 8 characters and contain at least 1 lowercase, uppercase and special character." Below the form, there are two checkboxes for agreeing to terms & conditions and data protection policy, followed by a "Create profile" button.

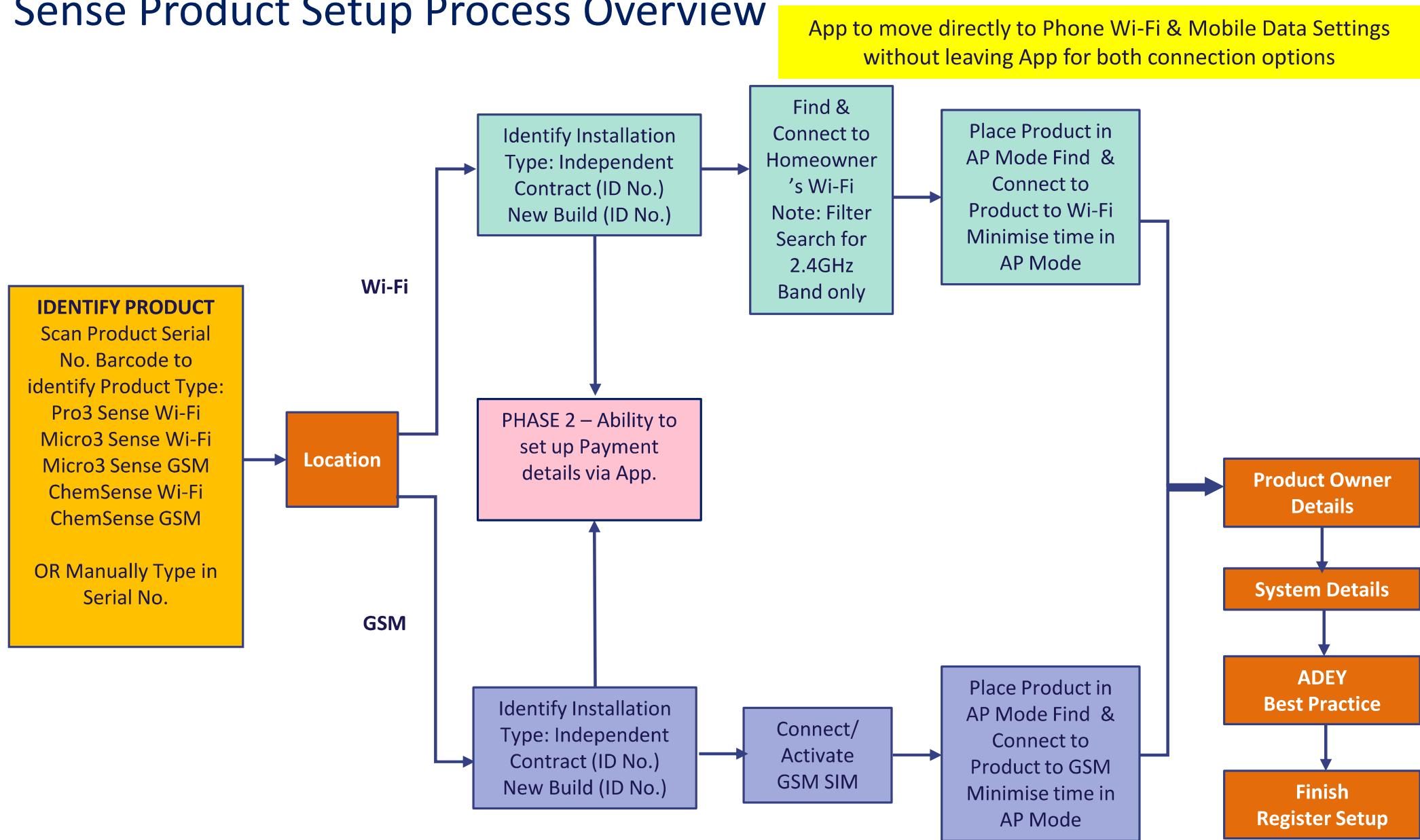


For Profile - Use existing Fields shown.

Note: Add 'Dr' to Title options.

Need to define how to associate an Installer with an Organisation – Consider options: Set up Individual Account first or wait for invite from Adey or Organisation? Both methods likely to be required.

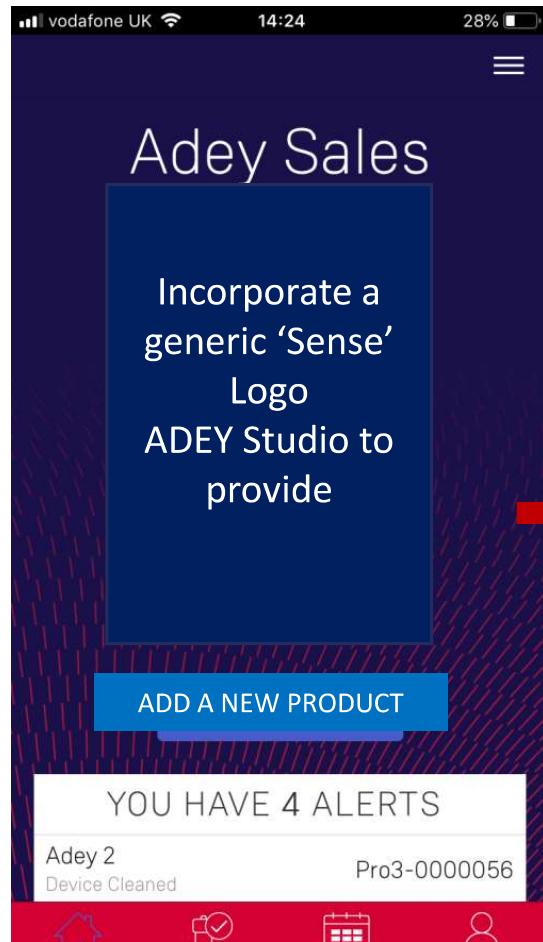
Sense Product Setup Process Overview



Product Connection Process

No. Sequence
Steps!!!

Identify Product through 2D Barcode Scanning



- Home Page allows ADEY Sense Product to be connected

ADD A NEW PRODUCT

Scan Barcode on Product



Scan barcode

Ensure mobile phone has Wi-Fi enabled & mobile data switched on

Manual Serial No. entry

< BACK NEXT >

Scanning Barcode identifies Connection Route:

- GSM – IMEI CODE
- Wi-Fi – Serial No. as per Existing Pro3 Sense

Manual Serial No. entry option also required.

Cellular example displayed:

CELLULAR SETUP

IMEI

0123456789

ADEY Product

ChemSense

Serial No.

ChS1-60001234

Note: New Serial No.'s to use Check Digit as per Pro3 Sense 13 digit format.

IMEI code confirms product uses Cellular Comms

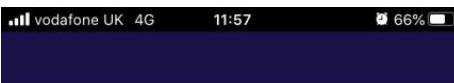
Location

Product Type:
Micro3 Sense
Pro3 Sense
ChemSense

Option to add Products as range grows

Product Connection Process

Location



ADD A NEW PRODUCT

LOCATION

Postcode *

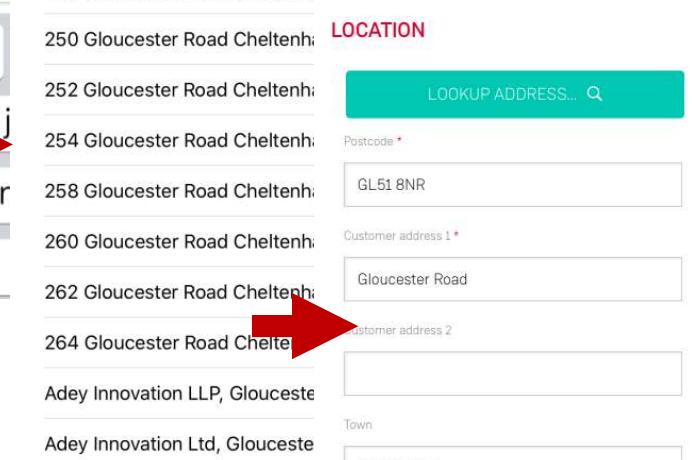
Customer address 1 *

Customer address 2

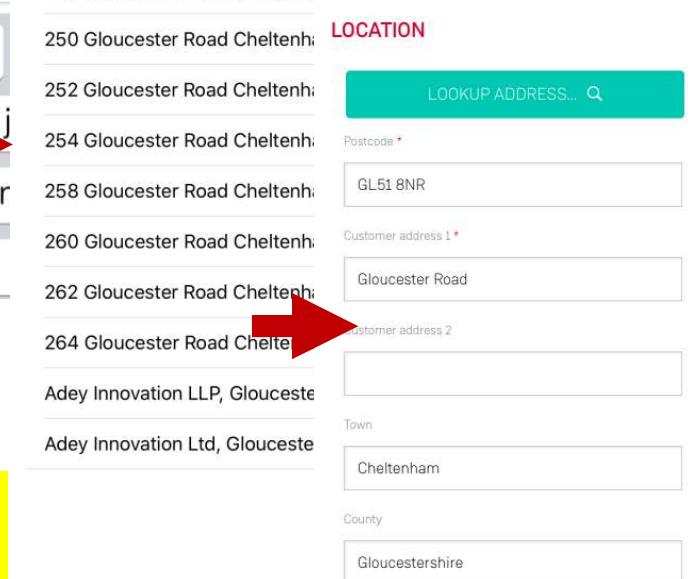
Town

County

Country



LOOKUP ADDRESS function to be available with manual entry option if the postcode is not recognised e.g. New Build or Field Trial in another country.
Note: GPS option also being investigated through existing LOOKUP ADDRESS provider – TBC.



Installation Type

Product Connection Process

Installation Type

Once Category chosen:

Installation Category

ADEY Product
Micro3 Sense

Serial No.
Mic3-10001234

Installation Category
Please select category

Independent Installer
Contract Installation
New Build Installation

Installation Categories –
What do they mean?

< BACK **NEXT >**

Independent Installer

< BACK **NEXT >**

Contract Installation

Please select Contractor from list

Contractor A
Contractor B

Enter Contractor ID No. if name not listed above
AB-123

New Build Installation

Please select Developer from list

Developer A
Developer B

Enter Developer ID No. if name not listed above
AB-123

< BACK **NEXT >**

Connect
to Wi-Fi
or GSM

Independent Installer – Product monitoring paid by Installer after 1st 12 months.

Contract Installation – Product monitoring paid by Contract Account after 1st 12 months.

New Build Installation – Product monitoring paid by New Build developer or Maintenance Contractor after 1st 12 months.

Product Connection Process

Wi-Fi Setup

Need to consider when process fails....

Can Factory Reset be less easily 'triggered'?

WI-FI SETUP

ADEY Product

Micro3 Sense

Serial No.

Mic3-10001234

Can Product Type define
visuals used for Pro3,
Micro3 & ChemSense
Products?

◀ BACK

NEXT ▶



INSTALLER ONSITE CHECKLIST

Please ensure the following points are covered with the Homeowner prior to the installation:

- Check Wi-Fi router is available and request the password from the Homeowner.
- Check signal strength using the Wi-Fi checker App and/or the Homeowner's mobile phone at the filter install position. Refer to Adey Website for further details.
- Ask the Homeowner for their email address for warranty registration.

◀ BACK

NEXT ▶

CONNECT TO WI-FI

Check Wi-Fi router is available and request the password from the Homeowner before commencing this process

Select the NEXT button below to begin the connection process.
This will automatically take you to your mobile phone Wi-Fi Settings

If the Wi-Fi router is unavailable, please enter the authorisation code to skip the Wi-Fi connection:

TW01

◀ BACK

NEXT ▶

Skip Wi-Fi Connection

Connect to Wi-Fi Cont.

Need to cater for New Build Scenarios. Can this link to the backend where authorised codes can be accessed/verified to allow the Wi-Fi connection to be skipped?
Note: Portal needs to manage authorisation codes.

Product Connection Process

Connect to Wi-Fi

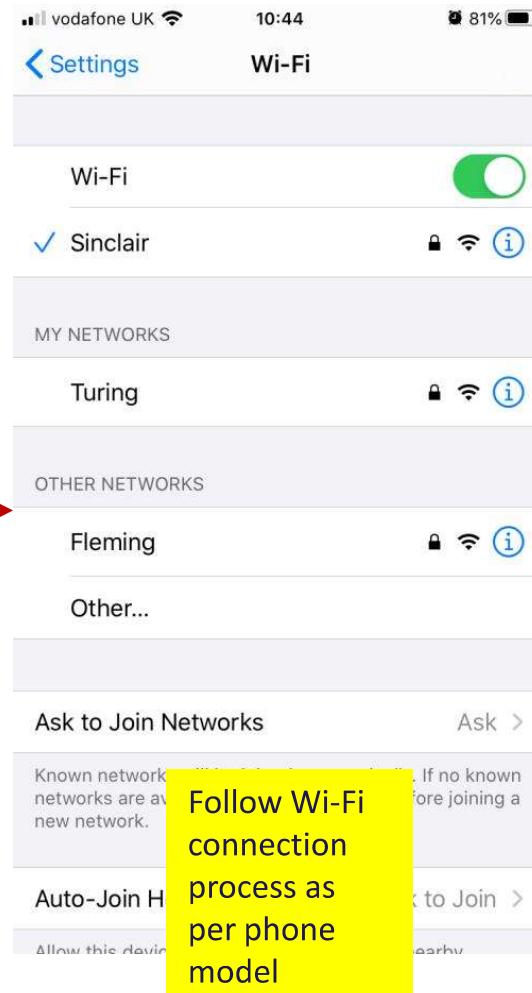
CONNECT TO WI-FI

Check Wi-Fi router is available and request the password from the Homeowner before commencing this process

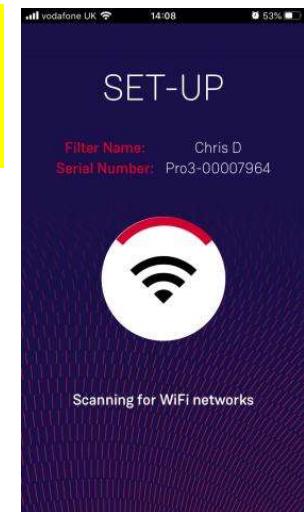
Select the NEXT button below to begin the connection process.
This will automatically take you to your mobile phone Wi-Fi Settings

< BACK

NEXT >



Note: Will existing 'Scanning for Wi-Fi networks screens be required?
Wouldn't show Filter details at this stage.

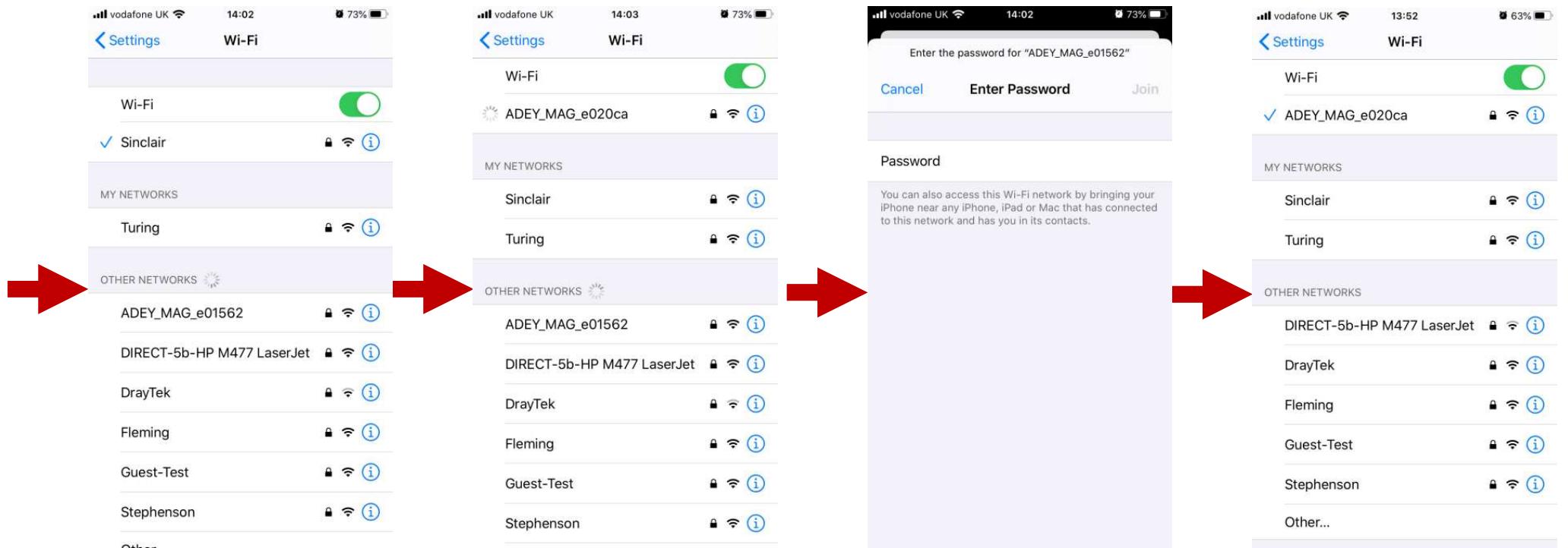


Return to App once connection established
- How does this work?

Is there a way to only search for 2.4GHz band routers to ensure selection of correct band for Product?

Product Connection Process

Connect to Filter cont.



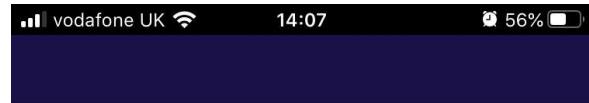
Follow Wi-Fi
connection process as
per phone model

Return to App - How?

Product Owner Details

Product Connection Process

Product Owner Details



PRODUCT OWNER

Customer Title *

Customer forename *

Customer surname *

Email *

Telephone

< BACK

NEXT >

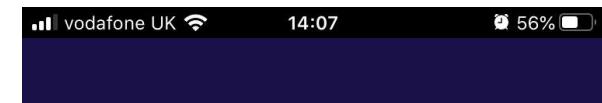
Independent Installer

Independent Installer – In this instance the Homeowner is the Product owner in terms of Warranty. Note: The Installer will pay the monitoring fees after the 1st 12 months.

Contract Installation

New Build Installation

Contract Installation & New Build Installation – In these instances the Product owner is either the Organisation who owns the tenanted property or initially the New Build Provider/Maintenance Contractor who will pay for the monitoring service after the 1st 12 months. The Homeowner will be defined at a later date via the Admin Portal or the App (TBC?) for the New Build scenario .



HOMEOWNER

Customer Title *

Customer forename *

Keep 'Product Owner' the same title name within the App? TBC

PRODUCT OWNER

Customer Title *

Customer forename *

Go to System Details

Product Connection Process

System Details



The screenshot shows a mobile application interface for entering system details. At the top, there is a status bar with signal strength, 'vodafone UK' provider, time '14:08', and battery level '54%'. Below the status bar, the word 'SYSTEM' is centered in red capital letters. The form fields include:

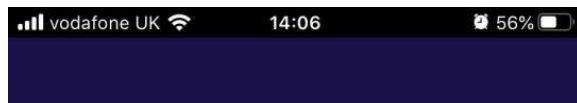
- Number of radiators:** Input field containing '10'.
- Boiler brand:** Input field containing 'ADEY'.
- System Type ***: A dropdown menu currently set to 'Open system'.
- Radiators ***: A dropdown menu currently set to 'New radiators'.
- Pipework ***: A dropdown menu currently set to 'Copper / plastic'.
- New boiler** and **Existing boiler**: Two button options for boiler type.
- New filter** and **Replacement filter**: Two button options for filter type.
- Smart thermostat fitted?**: A button with two options: 'No' (red) and 'Yes' (grey).
- Filter replaced under warranty?**: A button with two options: 'No' (red) and 'Yes' (grey).
- < BACK** and **NEXT >**: Navigation buttons at the bottom.

System Details – Keep fields as per Pro3 Sense setup. Note: Boiler Brand also changing to a mandatory field in ProClub App (Nov. '19).

Go to ADEY Best Practice

Product Connection Process

ADEY Best Practice



ADEY BEST PRACTICE

JOB DETAILS

Please log ADEY Best Practice steps completed below:



ADEY MC3+ or MC5 used?



MagnaCleanse system flush complete?



Water test complete?



ADEY MC1+ protection used?

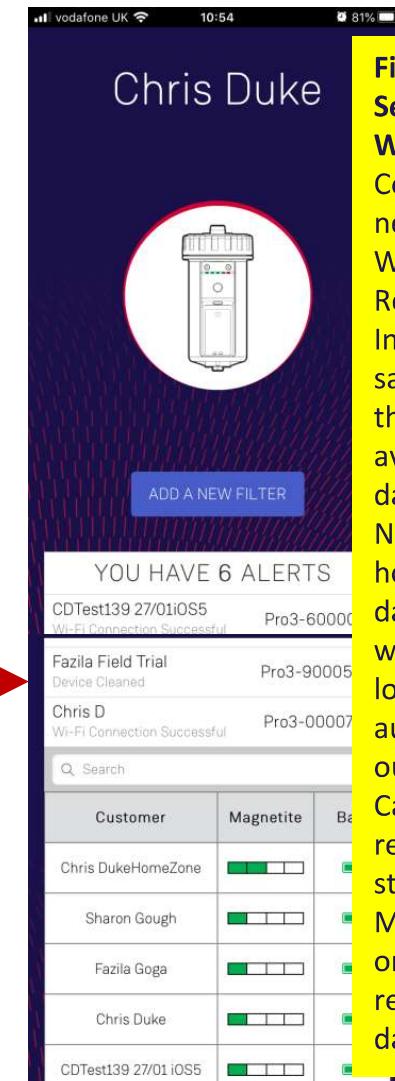
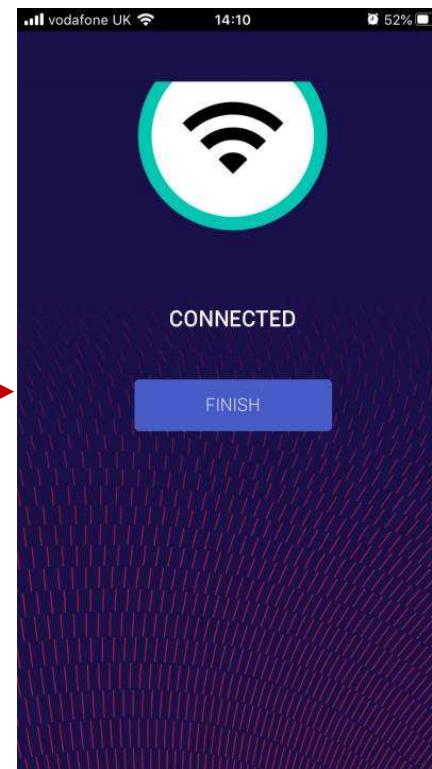
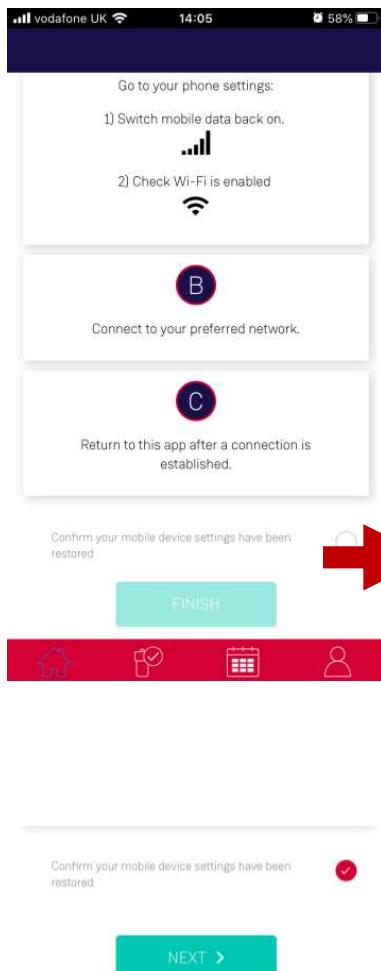
< BACK

NEXT >

Go to Finish/Register
Warranty

Product Connection Process

Finish Setup/Register Warranty



Finish – Return to Product Home Page

Current Pro3 Sense – restore phone settings reminder is okay, but need to consider a better way to ensure Warranty Registration is completed every time especially if data is cached.

Product Connection Process

Cellular Setup

CELLULAR SETUP

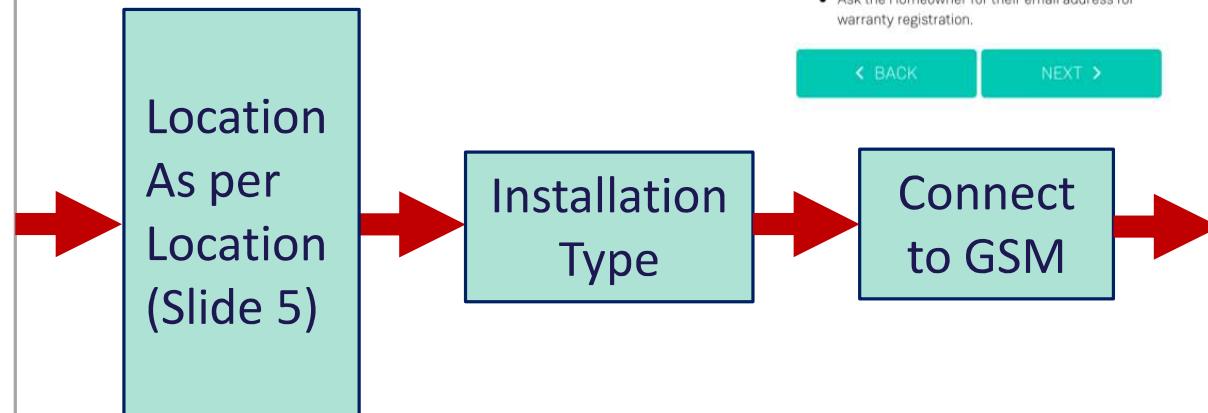
IMEI
0123456789

ADEY Product
ChemSense

Serial No.
ChS1-60001234

Barcode Scanned:
Installer receives confirmation of profile registration & validity

< BACK **NEXT >**



New GSM Installer Onsite Checklist Screen required e.g.

INSTALLER ONSITE CHECKLIST

Please ensure the following points are covered with the Homeowner prior to the installation:

- Ask the Homeowner for their email address for warranty registration.

< BACK **NEXT >**

Follow GSM Setup Process as defined by Corintech Provisioning method – refer to next slide....

Cellular needs to connect to Server to verify SIM IMEI No. (Unique Identifier).
Mobile Data or Connection to Homeowner's Wi-Fi Router Required.

vodafone UK 21:34 89%

INSTALLED ONSITE CHECKLIST

Please ensure the following points are covered with the Homeowner prior to the installation:

- Ask the Homeowner for their email address for warranty registration.

< BACK **NEXT >**

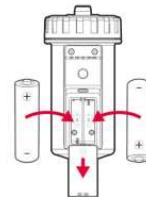
Product Connection Process

Cellular Setup cont.



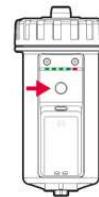
SET-UP

REMOVE BATTERY TAB OR INSERT BATTERIES



TEST BATTERIES

Press and release the Check Button



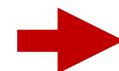
ENTER DEVICE ACCESS POINT MODE

Press and hold the Check button for 6 seconds until the green LEDs flash twice

◀ BACK

NEXT ▶

Product needs to enter Provisioning/Access Point Mode to connect to Server.
Suggest: Hold Check Button down for 6 Seconds to enter Provisioning Mode



Corintech/Behold/ADEY Development collaboration required to define exact App step sequence for GSM Connection Setup

Cellular: Will skip Wi-Fi Pro3 Sense method – Access Point Mode triggers data transmission:

The engineer presses the button on the ChemSense to trigger a data transmit.



The web server returns the provisioning profile associated with the device's ID in the HTTP response.



Engineer receives confirmation of provisioning through the app.



Product Connection Process

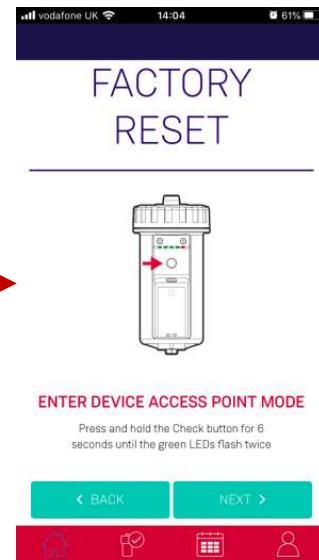
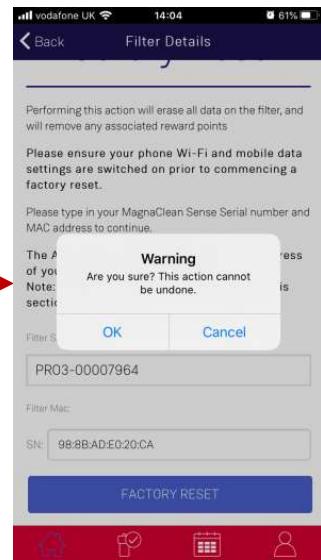
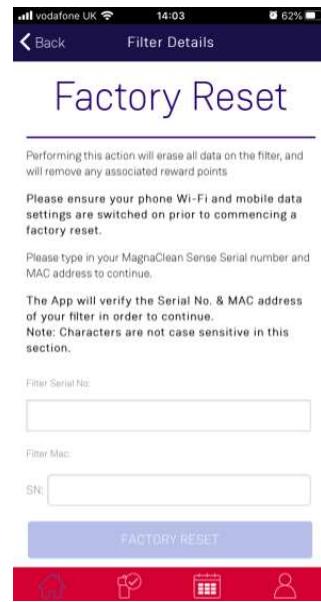
Cellular Product – Post GSM Setup....

Follow the same steps as per Wi-Fi once the Product & GSM Connection has been established i.e.



Product Reset (Wi-Fi)

Factory Reset



Access phone Wi-Fi & Mobile Data Settings without leaving the App. Confirm how to return to App?



FACTORY RESET

- 1 Go to your phone settings:
1) Switch mobile data off
2) Check Wi-Fi is enabled

- 2 Connect to the MagnaClean Sense network:
ADEY_MAG_XXXXXX
The password is located on the side of the canister:
Pro3-XXXXXXX
Note: The password is case sensitive

- 3 Return to this app after a connection is established.

- 4 Check all 5 LEDs illuminate, followed by 4 Green LEDs on the filter after the NEXT button is pressed below



FACTORY RESET

The filter has now been factory reset. Follow the instructions below to ensure your mobile device settings are restored:

A

Go to your phone settings:
1) Switch mobile data back on.
2) Check Wi-Fi is enabled

B

Connect to your preferred network.

C

Return to this app after a connection is established.

Confirm your mobile device settings have been restored

FINISH

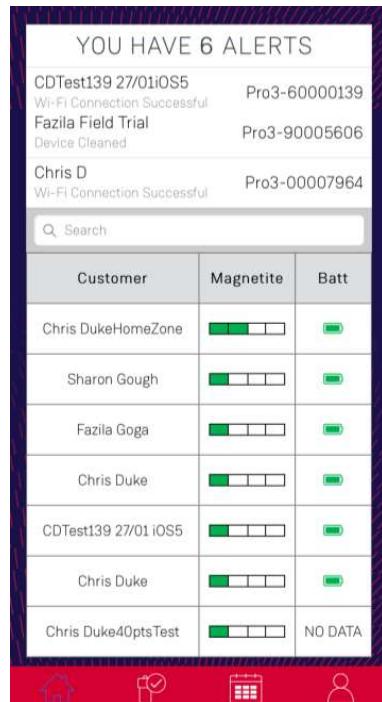
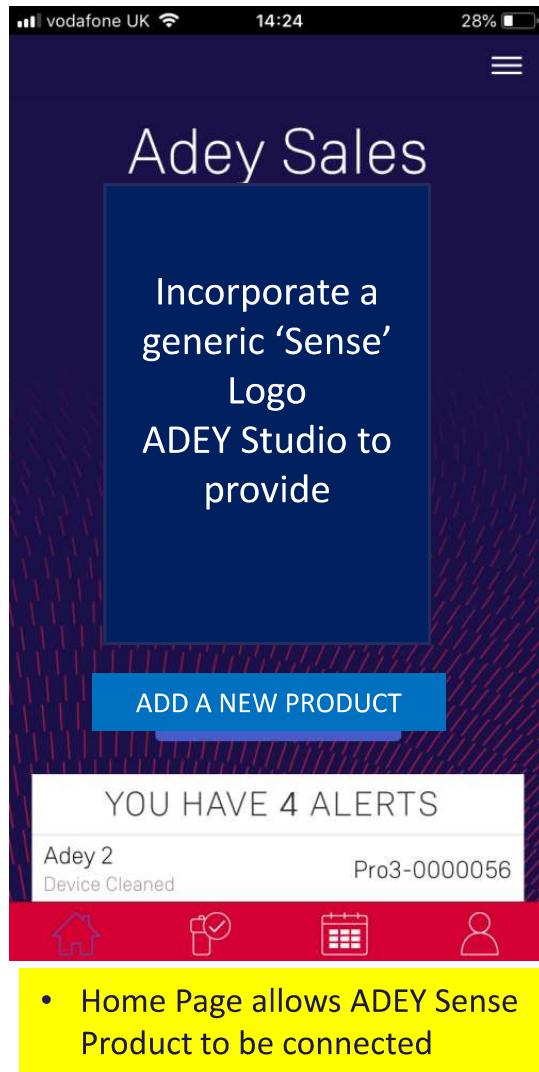


Finish – Return to Product Home

Factory Reset – Keep existing access to complete a Factory Reset via the Product details screen (currently named 'Filter details' in Pro3 Sense App) & via the Menu.
Consider removing the need to Factory Reset the device during Set Up. Revisit why we do this now – prevent duplication of Product Serial No. & MAC Address in database?
Add scanning functionality for the Serial No. (2D Barcode) as well as the MAC Address (Std Barcode (Pro3 Sense) as well as new Products.
Can the phone Wi-Fi Settings & the Mobile Data settings be directly accessed via the App?
Confirm if Factory Reset can be/needs to be completed on the GSM variants?

Product Overview

Sense Home Page – App Top Level Dashboard



Property Status bar example:

Address	Product	Status	Battery
ADEY HQ, Gloucester Road, GL51 8NR	Micro3		

Alerts

Dashboard Alerts to be similar to Pro3 – Suggest:

- Wi-Fi Connection Successful
- GSM Connection Successful
- Device Cleaned
- Annual Service Reminder
- Service Overdue
- Low Battery
- Loss of Comms
- Inhibitor Level Low

Full List TBC

Behold to recommend how Alerts can be sent in a cost effective manner to the Installer outside of the App itself e.g. SMS message.

Property Status

Address – 1st line of address & Postcode

Product Type - Suggest Product graphic or Product Name e.g. Pro3, Micro3, ChemSense (initial dev?)

(Property) Status – Red, Amber or Green

Battery Level – Red, Amber or Green Graphic

Full List to be discussed/confirmed. Suggestion: Combine Product Type & Status e.g. Green Pro3 Graphic?

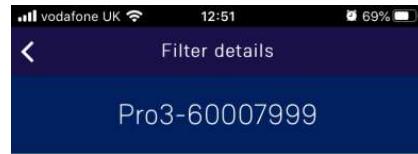
Click on Property Status

Product Details

Product Overview

Product (or Property?) Details Page – Pro3 & Micro3 Sense

Return to
Menu



Product details
Product Serial No.
NEW: Property Address?



Magnetite Capture Gauge (Keep
'as is' for Pro3 & Micro3)

Last data reading: 01/11/2019

Last data reading: XX/XX/XXXX
NEW: Need to include Comms Type e.g.
Wi-Fi or GSM (show as symbol?)

Annual service due: 18/10/2020

Annual service due : XX/XX/XXXX

INFORMATION

Magnetite capture level is low. The system is Protected.

ACTION

No action required.

INFORMATION & ACTION – Remain the
same or update? TBC.

Filter warranty expiry date: 18/10/2029

Filter warranty expiry date: XX/XX/XXXX



Battery Level – Same Graphic

HOMEOWNER CONTACT

OWNER CONTACT (Name TBC)

DELETE FILTER

DELETE PRODUCT

FACTORY RESET

FACTORY RESET

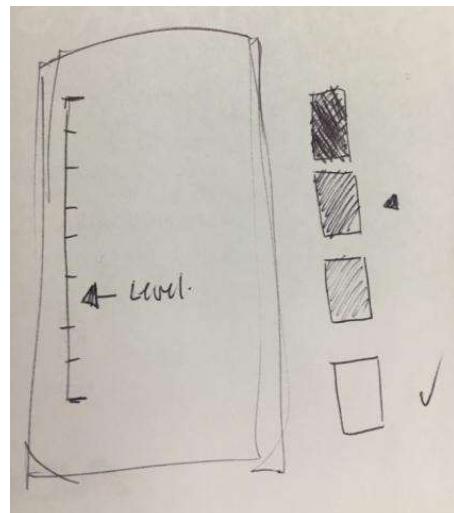


Red Bar – Remove Calendar Function
Product Warranty – Remove Shortcut (TBC)

Product Overview

Product (or Property?) Details Page – ChemSense

Return to
Menu



Inhibitor Level (Left) &
Turbidity Level (Right)
mock up to aid discussion.

vodafone UK 12:51 69% Filter details Pro3-60007999

Product details
Product Serial No.
NEW: Property Address?

Incorporate new graphics
– Inhibitor Level
- Turbidity Level

Last data reading: 01/11/2019
Annual service due: 18/10/2020

INFORMATION

Magnetite capture level is low. The system is Protected.

ACTION

No action required.

Filter warranty expiry date: 18/10/2029

INFORMATION & ACTION – New Info/Action required for ChemSense

Battery Level – Same Graphic

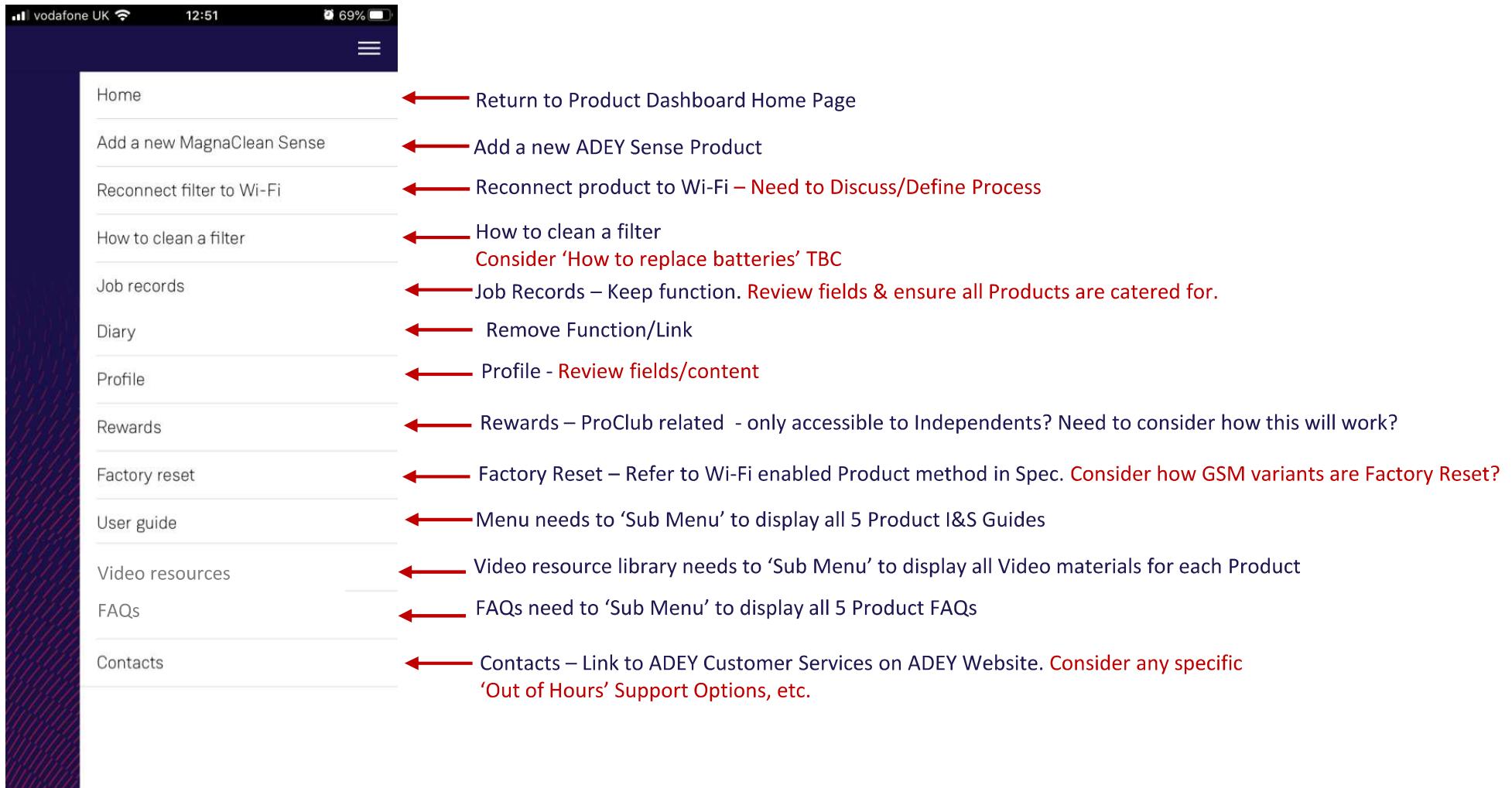
HOMEOWNER CONTACT
DELETE FILTER
FACTORY RESET

OWNER CONTACT (Name TBC)
DELETE PRODUCT
FACTORY RESET

Red Bar – Remove Calendar Function
Product Warranty – Remove Shortcut (TBC)

App Menu

Menu Page



Next Steps/Discussion Points:

1. Top Level Dashboard – How to present different Products on App Interface – Expand upon detail displayed in Spec.
2. Menu Functionality Requirements – Consider ‘Sub Menus’ to cater for all Product variants....
3. ChemSense Specific – Initially discuss. Dan to also expand upon how to display results, etc.
4. ADEY to provide updated T&Cs
5. Admin Portal/App Display Crossover
6. Water Test App/ADEY Best Practice – Need to integrate? Phase 2 considerations?

Thesaurus

- **iOS** – iPhone Operating System (Apple).
- **IoT** – Internet of Things.
- **MagnaClean Professional 3 Sense** – This is the Product Brand name & how the Product will be referred to at Point of Sale.
- **MagnaClean Sense** – The associated name for the Magnetite Capture data recording technology.
- **MagnaSense** – An early derivative of the top level MagSense Project name (See below).
- **Magnetite** – Magnetic Iron Oxide Sludge found in Radiators & Central Heating Systems.
- **MagSense** – This is the top level Project name for the new Product range to deliver a Product based on the MagnaClean Professional 2 Product & an accompanying App (iOS & Android Mobile Phone Device compatible).
- **Product or Product Device** – Refers to the MagnaClean Professional3 Sense, Micro3 or the ChemSense Products.
- **SMART** – Self-Monitoring Analysis and Reporting Technology is a diagnostic method originally developed as a Predictive Failure Analysis tool.
- **GSM Cellular** – Global System for Mobile Communications is the technology used to make wireless calls incorporating a Sim (Subscriber Identification Module) Card.