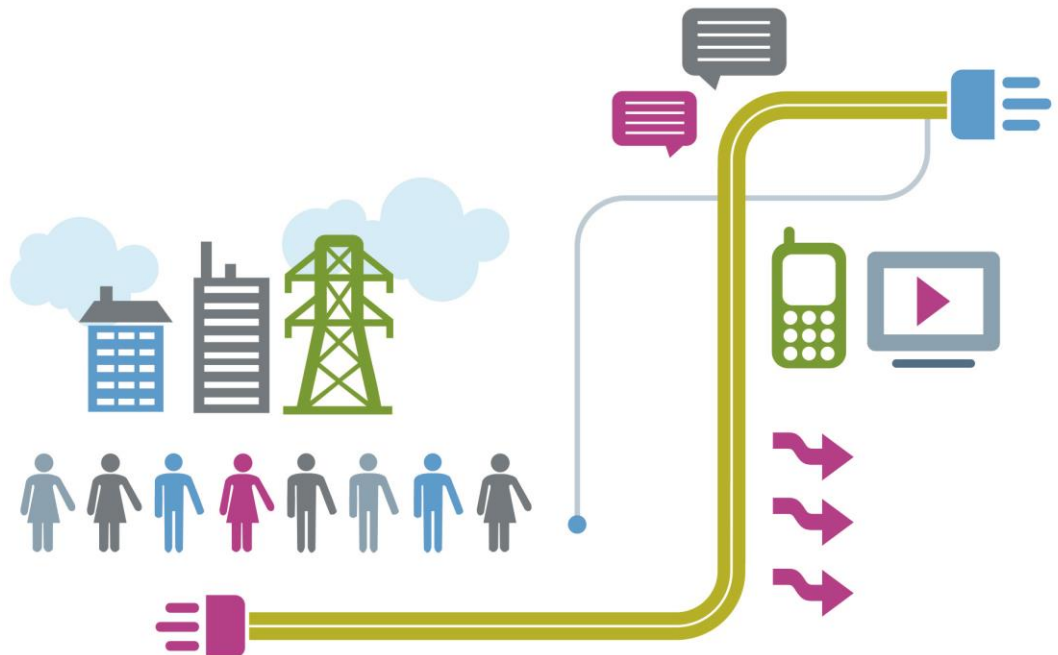


BEAMA CONNECTED HOMES CONSUMER ACCESS DEVICES A BEAMA GUIDE

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by Honeywell



Pegler Yorkshire

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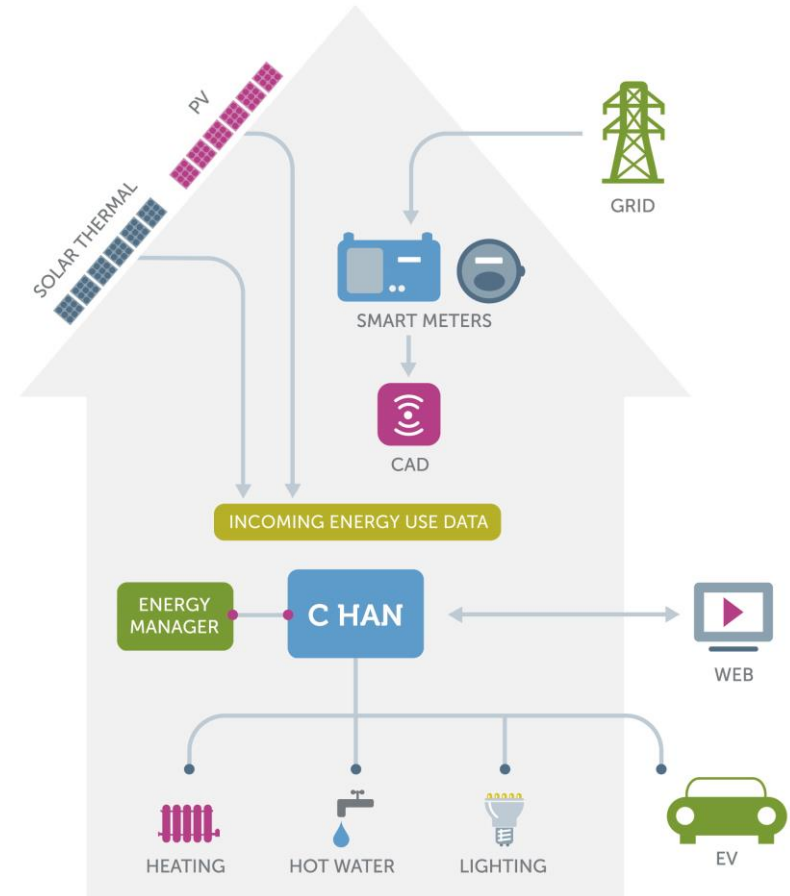
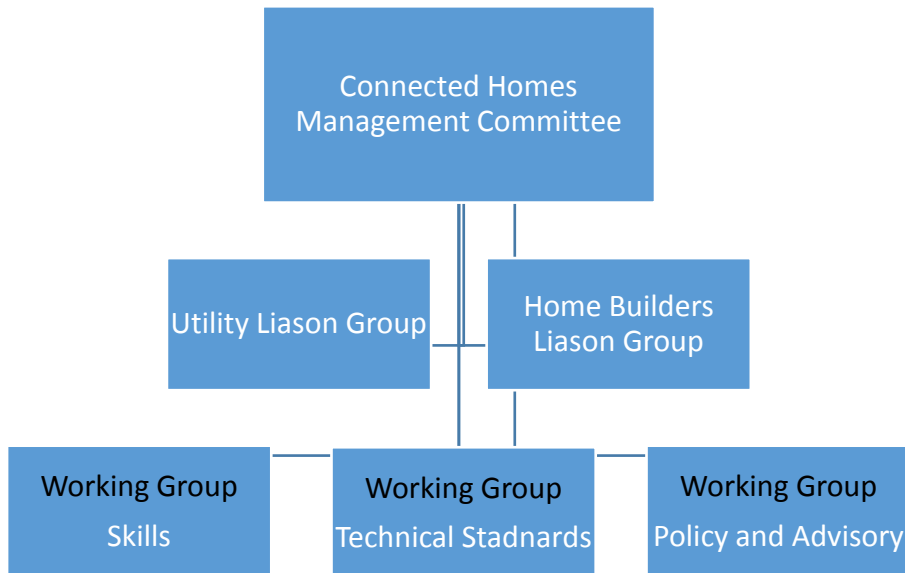
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Group Structure

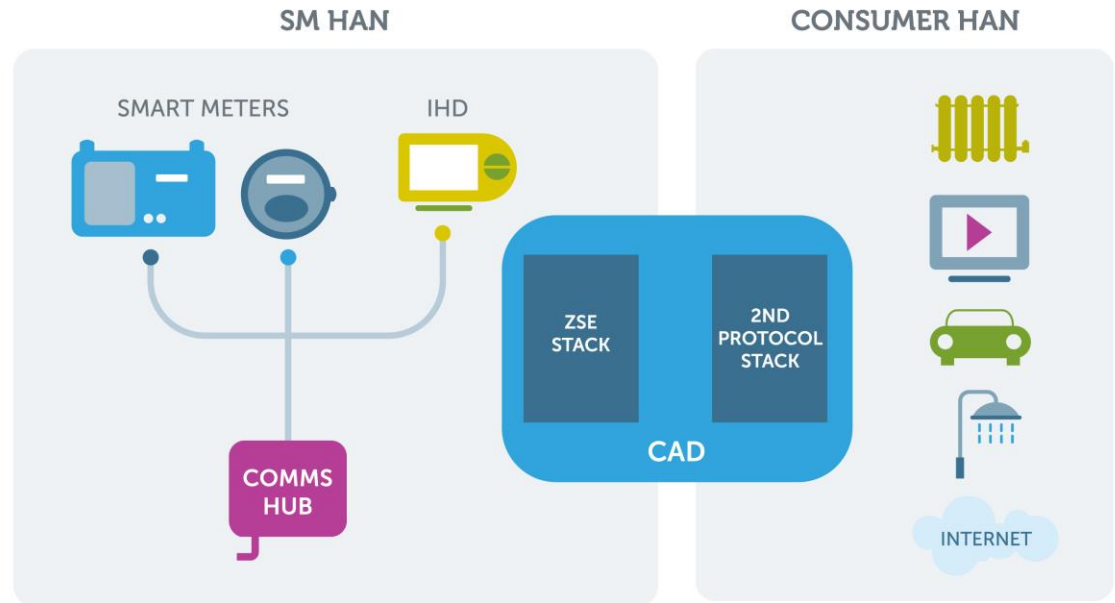
Group Scope

BEAMA Emerging Markets



- What is a CAD?

A CAD is a physical or logical device that links the SM HAN and the C HAN which is linked to a wide range of fixed and portable building service technologies. The CAD is permitted to pair with the SM HAN and extract real time data that can be utilised by the consumer e.g. for increased efficiency and cost effective use of their heating and hot water systems.



A CAD requires a connected to the SM HAN. This requires the CAD to contain a ZigBee Smart Energy (SE) module (ZSE Stack), typically realised as a ‘System on Chip’ (SoC) device. This model contains dedicated hardware to support the lower layers of the ZigBee protocol stack and a processor to handle the higher layers of the ZigBee SE application. The connection is established by pairing the CAD with the Comms Hub, this interaction is handled by the ZigBee device in the CAD. Once paired, the ZigBee device establishes what meters are using in the SM HAN by using the ZigBee SE service discovery process. This half of the CAD is always there in any CAD.

The 2nd Protocol Stack is typically used to enable the SE information to be used by other systems or devices, this interface could be proprietary or through a standard API.

- **Smart Heating Controls - hot water and heat storage**

Smart heating systems that know when the user requires hot water and heating can determine when best to use energy and still meet the householders requirements. Smart heating control systems with knowledge of energy tariffs, user requirements, heating systems and building characteristics and weather conditions could calculate when to take power, timing energy use appropriately and providing optimum start.

Data required:

Active Tariff price

Tariff Block Counter Matrix

Tariff

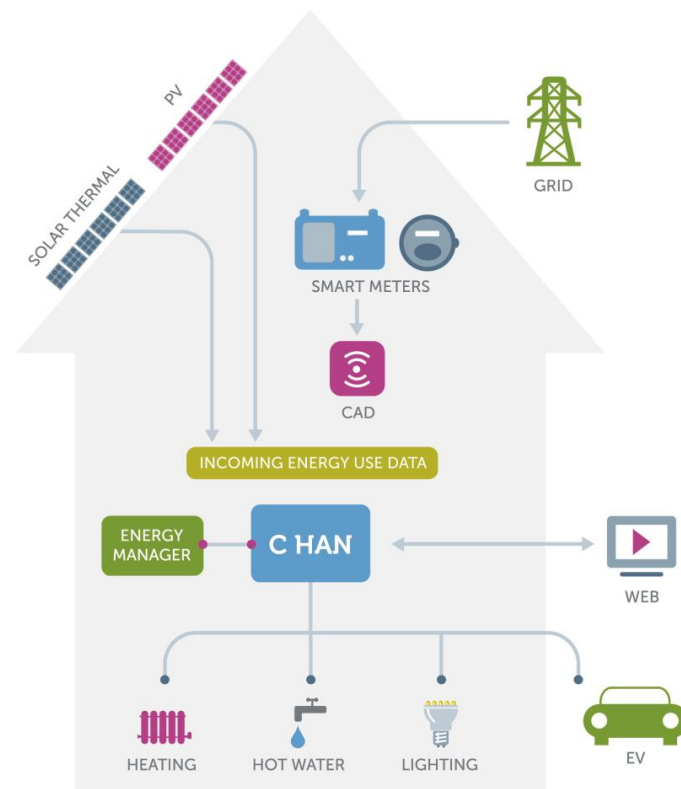
Block Price Matrix

Tariff Switching Table

Etc.....

- **Home appliances**

- **Cloud services**



- Multiple routes to market (e.g. energy supplier, CAD manufactures, service providers, appliance manufactures
- CAD is complimentary to the IHD and will exist in the market alongside the IHD and other HAN devices
- GB smart meter rollout places a strong emphasis on consumer engagement and for that reason the market in this sector is growing rapidly. Evident from the activity in BEAMA connected homes
- Key driver for CADs is smart meter rollout and its important we develop local CAD pairing – BEAMA project led by Jeremy Yapp, deputy Director of Smart Metering in BEAMA, and to be co-ordinated through the BEAMA Utility liaison group.
- More clarification is needed on the role of DNOs / utilities and 3rd parties in providing services to customers and related applications for energy use data - agenda item for the BEAMA Utility liaison group
- BEAMA will do some work to look at how the market for CADs will develop and how they might be embedded in appliances and controls (note the limitation on the number of CADs, we may need a 'master CAD' or allowance for more)

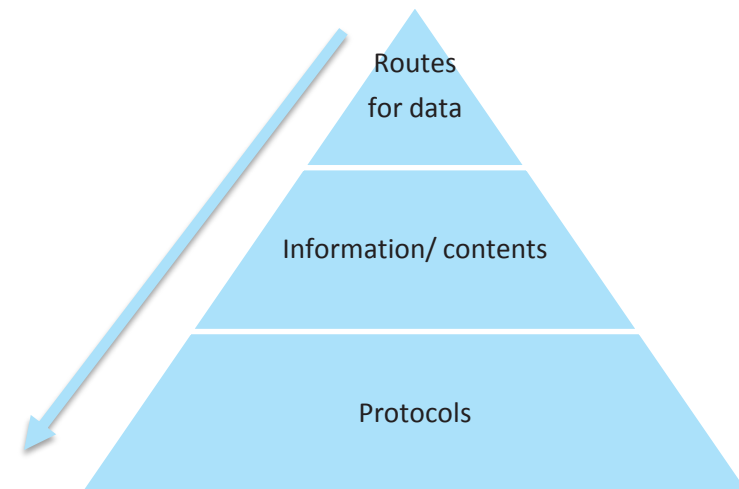
- APIs and standardising connected homes systems

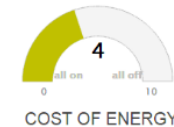
Achieving interoperability through a top down approach - Assessing API standards and what level of standardisation the market needs to ensure interoperability. BEAMA seek to get supply chain approval of the top level standards for communication platforms, and agree the required level of commonality for data communication in the CHAN and outside (to the cloud). A lot of standardisation is already underway at EU level and BEAMA are feeding into this.

What does this mean? This is to ensure that one CAD /device provider can talk to another CAD/device provider, and to ensure different routes of communication don't change the original message.

What's the risk? The concern would be that the large companies currently entering into the market (Google, Apple) introduce a de-facto standard protocol that is not fit for purpose long term. If something like this was to gain momentum this could be quite damaging to the UK market. We do need an agreed top level of standards to ensure customers do not end up stranded or in a situation whereby they have to replace equipment.

For more information about the standards BEAMA are covering and UK representation we provide in this sector contact Yselkla Farmer.





- DECC – Smart Meter Smart Data and Smart Growth- explains how you can access DCC services and data – references the BEAMA CAD Guide

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/397291/2903086_DECC_cad_leaflet.pdf

- DECC Workshop coming up - date TBC
- BEAMA are setting up a Utility Liaison Group under connected homes and will be inviting all utilities to attend quarterly meetings covering relevant work. The first meeting will be in March, and covering local CAD Pairing. Those interested to contact Yselkla Farmer
- Developing the BEAMA Smart Grid demo to test connected home solutions
- Working with Micro SMEs

