

P&G and Biobridges Call for Innovative Solutions

Sustainable, Circular and Bio-Based Materials and Solutions in Braun and Oral-B products

SPECIFICATIONS FOR CHALLENGE 1

Braun Cleaning Center

What are the consumer needs?

During the normal daily shaving routine, the shaver - mostly the cutting elements in the head - is collecting grease from the skin or stubbles from the cutting action. While some consumers prefer a simple cleaning with a brush or simply rinsing it under the tap water, most Braun premium consumers (and a big portion of mid- and low-tier shaver users) are choosing a more convenient option for cleaning their shaver: they clean the shaver in the so-called "Cleaning Center" or "Smart Care Center". This additional device-accessory provides multiple functions today:

- Cleaning (grease & stubble) - key claim in certain countries 99.99% of germs are removed.

- Light scent should be deposited on the shaver (e.g. lemon) as a key consumer signal for the cleaning process.

- Lubricating of the mechanical parts in the shaver head.

- Charging of the shaver while in the cleaning center.

- Drying of the shaver – most clean-shaven consumers are using their shaver every day or every other day).

Many consumers use the cleaning center after every other shave.

Actual solution:

Braun Cleaning Center are used in combination with BRAUN Shaver cleaning centers for automatic cleaning, lubrication and re-freshening and can be replaced after a certain number of cleaning cycles. The Cleaning Center Cartridge is mainly made of transparent colored PP (with a PA mesh and a metal ball inside) and contains an alcohol based cleaning fluid.

Today the cleaning center works with a largely alcohol-based solution (ca. 95% Ethanol or Isopropanol). The alcoholic solution has been originally chosen due to several advantages over other options: i) able to dissolve the grease, ii) quick and easy drying (the shaver should be fully dry min. 4 h after cleaning), iii) cost-effective, iv) anti-bacterial properties.

When the fill level is lower than the threshold, the Cleaning Center indicates to consumers to replace the Cleaning Center Cartridge.



Why is a change needed?

Braun wants to maintain the convenient and efficient cleaning functionality while providing a more sustainable alternative for consumers. Ideally this alternative should deliver at least equal cleaning performance (plus lubrication, charging, etc.) and should come without the labelling and logistics-restrictions of a highly flammable liquid. The current cleaning center fluid has also limitations in recyclability that are caused by a combination of about 50ml remaining alcohol in the used cartridge and a very sturdy/robust outer housing that consists out of high grade Polypropylen but needs to be disposed in landfill today because the cartridge is not compatible with current recycling streams (i.e. cannot be destroyed during shredding).

How does it tie to the business/ Company strategy?

The Cleaning Center and cleaning center re-fills are an area of competitive advantage today and a sizeable part of Braun business. We want to grow this part of the business over the next years and therefore, providing sustainable alternatives for consumers is essential. This new solution should step-change the recyclability of the re-fills.

What is the need and what is the desired outcome of project?

The solution should offer a convenient alternative for consumers that step-changes the recyclability of the re-fills. Grease and stubbles should be removed reliably during an automated process without heavy consumer interaction. Key is that the shaver is clean, lubricated and dry after the cleaning cycle.

- Braun key challenge: re-design the cleaning center for a true circular economy

Objectives:	Re-design the cleaning center approach to enable circular material flows. This could be achieved by moving to a very different cleaning approach and/or re-designing the fluid-cartridge system to be compatible with existing or new recycling streams.
Challenge to be addressed by the new solution:	Water-based solutions have significantly longer drying times vs. the current alcohol-based version. The challenge is to deliver cleaning of grease and stubbles and quick drying (ca. 2-4h after cleaning), while avoiding high flammable liquids.
Characteristics and consumer's benefits:	Improved end-of-life and reduced impact on the environment.

- Braun 1a: Identification of an alternative bio-based Cleaning Center liquid

Objectives:	<ul style="list-style-type: none">• Provide a more sustainable cleaning center fluid alternative, maintaining the same cleaning functionality.
Challenge to be addressed by the new solution:	<ul style="list-style-type: none">• Bio-based alternative for the cleaning center fluid;• Elimination of the labelling and logistics-restrictions of a highly flammable liquid (because of the high alcohol content in the cleaning fluid, Cleaning Center Cartridges are handled in the supply chain in line with safety requirements for "highly flammable" goods);• Improve end-of-life.
Characteristics and consumer's benefits:	<ul style="list-style-type: none">• Able to dissolve the grease;• Quick and easy drying (the shaver should be fully dry min. 4 h after cleaning);• Cost-effective.

- Braun 1b: Replacement of Cleaning Center Cartridge main material

Objectives:	Replacement of Cleaning Center Cartridge main material "PP" (polypropylene) with a bio-based alternative material and a potentially resulting cartridge redesign.
Challenge to be addressed by the new solution:	<ul style="list-style-type: none">• Replace the existing material either<ul style="list-style-type: none">a) with a bio-based or recyclable PP with identical materials specification orb) create a new material/mechanical design combination, which is able to fulfil relevant safety standards.• In combination with item 1, potentially other safety standards can be applied, possibly resulting in less design complexity;• Improve end-of-life.
Characteristics and consumer's benefits:	<ul style="list-style-type: none">• Maintain functionalities, characteristics and safety standards of the actual solutions;• Cost-effective;• Anti-bacterial properties.

