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AIM – European Brands Association, the Alliance to End Plastic Waste and the City of Copenhagen join forces to start semi-industrial trials in the next phase of testing digital watermarks for intelligent sorting of packaging waste

Press release for immediate release – Brussels, 6 September 2021 – AIM, the European Brands Association, and the Alliance to End Plastic Waste announced today a partnership to drive the next stage of development for intelligent waste sorting under the Digital Watermarks Initiative HolyGrail 2.0. They will work with the City of Copenhagen to conduct the semi-industrial test phase of the pilot. With this milestone, developers move one step closer to precision identification and sorting of plastic packaging waste through digital watermarks, with the potential to revolutionise the sorting and recycling process of plastic packaging.

Over the next four months, a prototype sorting detection unit will be installed at the Amager Resource Centre (ARC) in Copenhagen, where the trials and demonstrations with around 125.000 pieces of packaging representing up to 260 different stock-keeping units (SKUs) will be held. Engineers will test for several parameters including the speed and accuracy of the system, to ensure its ability to withstand the pressures of full-scale industrial operations. If successful, digitally watermarked products could be introduced to store shelves in Denmark, France and Germany by the first half of 2022 for in-market demonstrations and industrial-scale trials.

Digital watermarks are imperceptible codes, each the size of a postage stamp. They cover the surface of a consumer goods packaging and carry a wide range of attributes such as packaging type, material and usage. Used packaging is collected and scanned on the sorting line with a high-resolution camera which detects and decodes the digital watermark. The packaging is then sorted into corresponding streams, based on specified attributes including food, non-food or polymer types. This leads to more accurate sorting streams and higher quality recyclates to be channelled back into the plastic packaging value chain.

Open Houses comprising a virtual tour and demonstration of the prototype sorting detection unit will happen at ARC on 19 October and 18 November 2021. Interested stakeholders can register here.

This milestone marks the second year of the HolyGrail 2.0 project. Since its launch in September 2020, it has grown to include over 130 participating companies and organisations across the complete packaging value chain. The pioneering HolyGrail 1.0 was facilitated by the Ellen MacArthur Foundation between 2016 and 2019.

"We are delighted to enter the next phase of semi-industrial testing within the Digital Watermarks Initiative together with our new partner, the Alliance to End Plastic Waste", said Michelle Gibbons, AIM Director General. "An initiative like this can only thrive with the wide support of different key stakeholders in terms of expertise, but of course also financial support. Collaboration is the way forward to achieve the EU's circular economy goals and we are confident that this technology has the potential to drive a truly circular economy for packaging."

"Recycling is a key pillar that must be invested in to advance a circular economy in plastic waste. The Alliance is excited to support the scaling of this project in its next phase of progress, in line with our mission to end plastic waste in the environment," said Jacob Duer, President and CEO of the Alliance. "As testing continues, we know there will be many things to solve along the way, but with strong collaboration of our public and private sector partners, we believe intelligent sorting can be a new frontier that could help dramatically improve plastic waste management."

"The City of Copenhagen has a political ambition to become the world's first carbon neutral capital by 2025. High quality plastic recycling that substitutes new production and reduces incineration is a key instrument to reach this goal. HolyGrail 2.0 has the potential to achieve this and we look forward to doing our part in the testing of the technology", said Merete Kristoffersen, Head of Division, Waste and Resources, City of Copenhagen.

Timeline and test markets

With the commencement of semi-industrial trials, HolyGrail 2.0 is on track to get to the exciting phase of in-market demonstrations planned for 2022.

The two machine vendors, Pellenc ST and Tomra, together with the selected digital watermarks technology provider Digimarc, are developing add-on modules for their detection sorting units, to be combined with existing NIR (near infra-red) sorters.

Both modules will be tested during the semi-industrial phase via trials at two different test locations. The first controlled tests using industrial-sized equipment and the Pellenc ST/Digimarc module are scheduled for October 2021 at ARC sorting centre.

Pending successful completion of the semi-industrial trials, brand owners and retailers will then bring their enhanced products to market in Denmark, France and Germany. During this commercial test phase, consumers will buy on-shelf products with digitally watermarked packaging. Used packaging will enter the waste stream after consumption. The sorting units will be placed in 5 different locations in France and Germany, including MRFs (Materials Recovery Facility), PRFs (Plastic Recovery Facility) and recycling plants.

This last phase is scheduled to run until Q3 2022 and a public report outlining the techno-economic analysis of the digital watermark technology for sorting of packaging waste will be issued.

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About Digital Watermarks Initiative HolyGrail 2.0

The Digital Watermarks Initiative HolyGrail 2.0 – driven by AIM - European Brands Association and powered by the Alliance to End Plastic Waste – is a pilot project with the objective to prove the technical viability of digital watermarks for accurate sorting of packaging waste as well as the economic viability of the business case at large-scale. Digital watermarks are imperceptible codes, the size of a postage stamp, covering the surface of a consumer goods packaging and carrying a wide range of attributes. The aim is that once the packaging has entered into a waste sorting facility, the digital watermark can be detected and decoded by a high-resolution camera on the sorting line, which then – based on the transferred attributes (e.g. food vs. non-food) – is able to sort the packaging in corresponding streams. This would result in better and more accurate sorting streams, thus consequently in higher quality recyclates benefiting the complete packaging value chain.

More information

- Contact for media and information requests as well as quotes from partners and HG2.0 members: digitalwatermarks@aim.be
- Website, including FAQ, membership and latest news: www.aim.be/priorities/digital-watermarks
- Membership kit for interested companies and organisations:
    - Registration form for initiative FULL members – open to branded goods manufacturers and retailers only
    - Registration form for initiative ASSOCIATE members – open to all stakeholders from the packaging value chain
- HolyGrail 2.0 Charter outlining the governance and membership structure, meeting and voting rules, as well as the anti-trust statement

About AIM – European Brands Association

AIM (Association des Industries de Marque) is the European Brands Association, which represents manufacturers of branded consumer goods in Europe on key issues that affect their ability to design, distribute and market their brands. AIM's membership comprises 2500 businesses ranging from SMEs to multinationals, directly or indirectly through its corporate and national association members.

About the Alliance to End Plastic Waste

The Alliance to End Plastic Waste (Alliance) is a global non-profit with the mission to end plastic waste in the environment. The Alliance develops, deploys, and scales solutions across four strategic areas—infrastructure, innovation, education and engagement, and clean-up. As of June 2021, its portfolio comprises over 30 projects across 60 cities worldwide.

Tackling plastic waste is a complex challenge that requires collective action. Since 2019, the Alliance has convened a global network of industry leaders across the plastics value chain, together with government, civil society, entrepreneurs, and communities to work towards advancing a circular economy for plastic waste.

About Circular Copenhagen

Circular Copenhagen is the City of Copenhagen's innovation platform for new circular economy solutions. The aim of the platform is to develop – and contribute to – new solutions to advance the circular economy via public-private innovation projects. The platform is linked to the waste and resource management department under the Technical and Environmental Administration.