



New Plastics Economy Global Commitment

Digimarc Activities and Progress

In February of 2019, Digimarc was proud to sign the [New Plastics Economy Global Commitment](#) of the Ellen MacArthur Foundation. The initiative aims to build a circular economy for plastics by bringing together key shareholders to rethink and redesign the future of plastics, starting with packaging. To date there are more than 500 signatories and include the most noted brands, retailers and government entities. A full listing of participants can be found [here](#).

A requirement for all participants is an annual reporting process of activities to demonstrate transparency in meeting their pledges. By way of example, for consumer brands the primary focus is on reducing plastic waste through alternatives to plastic resins, reduction in quantity or amounts of plastic used, and increases in the amount of post-consumer recycle utilized for new products.

Our industry category is “Collection, Sorting, and Recycling.” Our pledge for mid 2020-2021 reads:

“Support the plastics packaging industry through collaborative projects for development of harmonized technology to increase sorting accuracy, obtain higher yields of recyclates and drive recycling through consumer engagement.”

Among our activities and progress through July 2021:

- Endorsed the Ellen MacArthur Foundations EPR statement which was published on June 15th, 2021.
- We are in progress with HolyGrail 2.0 involving multiple countries, more than 130 participants, have passed the first testing phase, received significant funding, and have exciting announcements coming later this year. This program will demonstrate enhancement of objects for recycling and detection, from consumer disposal on to monitoring the recycling waste chain and outputs in facilities.
- We are working with two leading optical sorting equipment manufacturers, with an estimated 80 percent global market share, to integrate Digimarc detection technology into prototype detection units for the HolyGrail 2.0 initiative.
- We continue to test and define specifications for Digimarc Barcode integration into 3D plastic objects, such as bottles, cups and trays. We are working closely with the industry’s leading plastic packaging manufacturers to help them apply Digimarc to various types of resins and manufacturing processes. We are seeing high accuracies in detection of such plastics in recycling environments.
- In addition to using molds to convey Digimarc Barcode into 3D objects, we are also exploring the use of lasers to create a unique identity in each individual object. This form of serialization offers the potential for greater capabilities in monitoring for reduction in Extended Producer Responsibility fees and track-and- trace applications, from the consumer to the recycling facility.
- Digimarc has established a reference design of the Digimarc Barcode detection module to help accelerate the development of prototypes and commercial units by sorting equipment manufacturers. Digimarc has also progressed the state of the art in detection methodologies of



enhanced objects by developing accelerated implementations of the Digimarc Barcode detection software for use in optical sorting machines. These advancements are part of our endeavors to scale the technology to industrial/commercial level.

- P&G, a leader in the HolyGrail initiatives, announced the commercial launch of Digimarc-enabled products for consumer engagement and recycling, initially in two European countries. We are similarly working closely with a number of other Fortune 500 brands in their initial implementations of Digimarc Barcode for recycling and re-use applications.
- Industry recognition is paramount to fostering support and adoption. In cooperation with HolyGrail and P&G, we won both the Overall Winner and Driving the Circular Economy categories for the Packaging Europe Sustainability Awards, won the End-of-Life Award by the Plastics Industry Association, the Circular Economy Innovation of the Year by the “edie” publication network, finalist for the Plastic Recycling Awards Europe and were accepted into the prestigious Solar Impulse Efficient Solutions during the World Economic Forum at Davos.
- Further recognition of our potential to provide fundamental and meaningful change in Design for Recycling practices is noted in the European Commission report, “Effectiveness of the Essential Requirements for Packaging and Packaging Waste and Proposals for Enforcement.” The report calls for a review to assess the feasibility of digital watermarking with a view to adopt a legal requirement for its use by 2030 to facilitate sorting.
- We have followed the U.S. state EPR discussion closely over the past year, submitting comments to states relating to labeling requirements for packaging; recommending digital watermarking be considered as one of the methods for communicating the recyclability of a package to consumers. While the phrase “digital watermarking” was not specifically adopted, language allowing for labeling technologies and innovations other than traditional print labels was amended in the bills for New York and Maine. [Maine LD 1541](#) “An Act To Support and Improve Municipal Recycling Programs and Save Taxpayer Money” has passed, making it the first packaging EPR bill in the U.S. Additionally, [Oregon SB 582](#) “Relating to modernizing Oregon’s recycling system” has passed the Senate and the House, awaiting signature from the governor. We will continue future advocacy work.
- As a trusted advisor and leader in the auto-identification of objects for recycling, Digimarc has shared its expertise over the past year through its membership in such organizations as the Association for Plastics Recycling, Petcore Europe, Consumer Goods Forum, Consumer Brands Association, Sustainable Packaging Coalition, Institute of Scrap Recycling Industries, the European Plastics Pact, the US Plastics Pact, and the Active and Intelligent Packaging Industry Association.