

DuPont™ Liveo™ Smart Biosensing Patch prototype

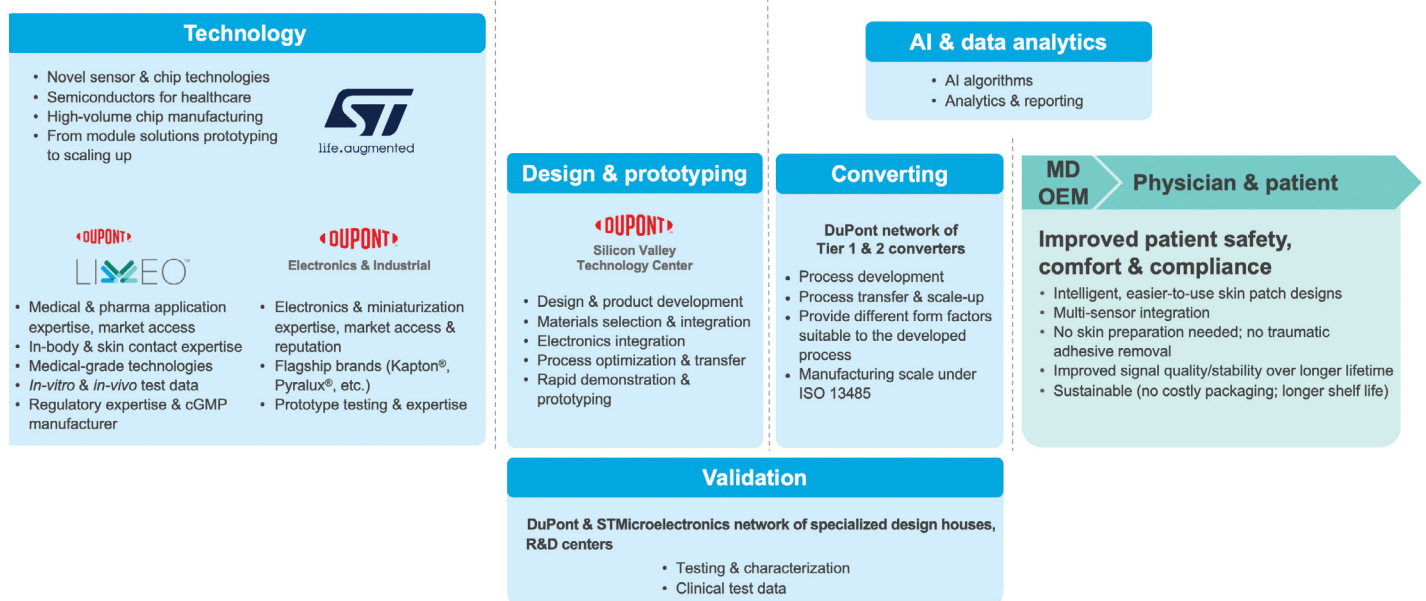
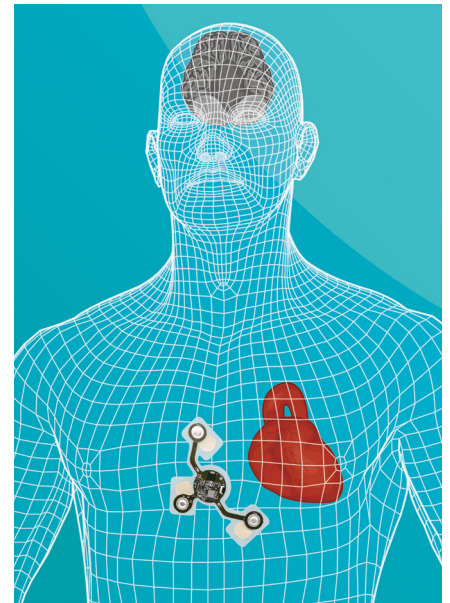
Measuring multiple vital signs and enabling a comprehensive analysis of electrical and mechanical cardiac functions

As healthcare needs change, the demand for smart, wearable monitoring devices has grown. However, device manufacturers face several challenges with the current generation of skin patches, which often are regarded as being difficult to use, being uncomfortable, having low functionality, exhibiting poor signal quality over time and having short wear times.

Healthcare providers and patients need a solution with compact integrated electronics and a reliable, predictive, cost-effective, long-lasting patch.

Our ecosystem of innovation & partnership

DuPont has developed an ecosystem of partnership in which companies can find technical support and expertise to design and prototype next-generation wearables. An example of such a partnership is the collaboration between DuPont and STMicroelectronics: Together, the companies have developed a wearable health technology platform that is intended to be a reference design/prototype upon which a final product can be developed.






Enabling a new wearable health platform ... together

DuPont and global semiconductor company STMicroelectronics collaborated to create a new intelligent, low-power-consumption skin patch platform for OEMs and medical device developers in the field of health diagnosis and monitoring. Each company brought expertise in its respective field to enable the development of technology that is capable of measuring heart and pulse rate, heart mechanical (SCG, GCG) and electrical (ECG) functions, respiratory rate, heart sounds, and blood pressure. The end result was a concept patch that accurately monitors electrical and mechanical cardiac functions.

Joining capabilities for wearable solutions

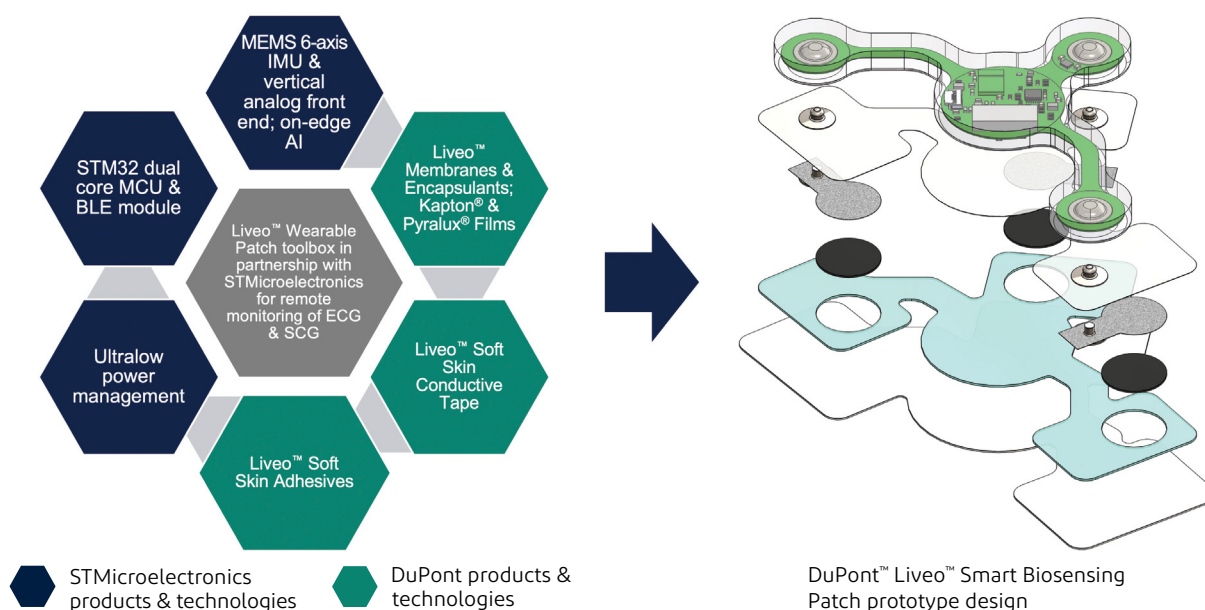
Wearable medical device toolbox

	<div> </div>	<div> life.augmented</div>
Expertise & capabilities	<ul style="list-style-type: none">• Portfolio of DuPont™ Liveo™ medical patch technologies, including new Liveo™ Soft Skin Conductive Tape• Design of patch layout• Rapid prototyping capabilities	<ul style="list-style-type: none">• Design of electronics & sensors for intelligent skin patches• Support on hardware, firmware, software & algorithms• High-volume manufacturing capabilities
Technology features & benefits	<ul style="list-style-type: none">• Intelligent, easier-to-use skin patch designs• Medical-grade technologies for wearables• Non-irritating on skin over long wear times (ideally up to 1-2 weeks); no traumatic adhesive removal• Signal quality/stability over longer lifetime (ideally up to 1-2 weeks), including lower susceptibility to motion artifact• Encapsulation for improved electronics protection	<ul style="list-style-type: none">• Intelligent sensor platform• Miniaturization• Integrated multifunctionality• Low-power-consumption platform• Data generation & in-sensor artificial intelligence• Adaptable platform; different sensors & components



Integrated patch technology for flexible hardware support

Collaborating to develop a patch with hardware embedded into a flexible patch design

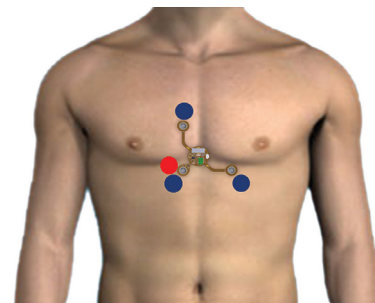
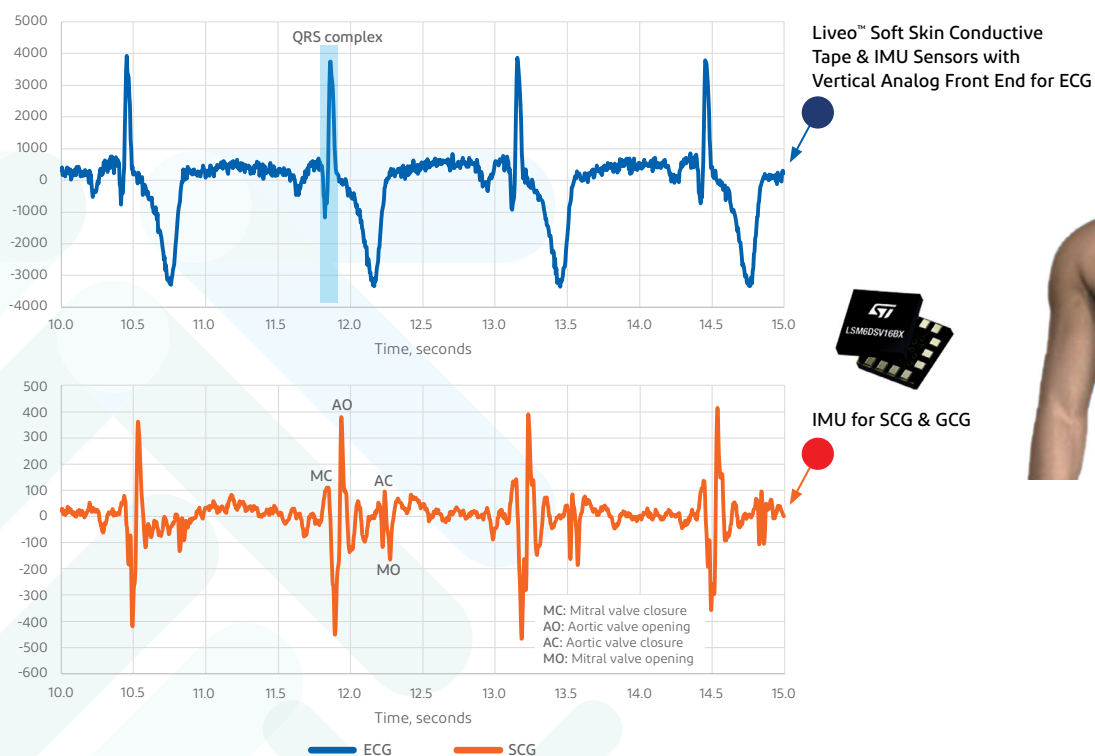


Synchronizing vital signs in one device

The resulting DuPont™ Liveo™ Smart Biosensing Patch prototype offers more comfortable, easier-to-use patch designs that are easy to scale and customize. It integrates electronics and sensor technology with expertise in high-performance medical wearable skin adhesive technology for continuous, longer-lasting, more reliable remote health diagnostics and monitoring data generation over time.

The device delivers accurate, fully synchronized vital signs integrated into one device. Liveo™ Soft Skin Adhesives and flexible Liveo™ Soft Skin Conductive Tape enable high stability and gentle skin contact for improved signal quality over a longer lifetime.

Synchronized electrical & mechanical cardiac monitoring



About DuPont™ Liveo™ Healthcare Solutions

DuPont™ Liveo™ is a globally recognized leader in technology for a broad range of innovations in medical devices, biopharmaceutical processing and pharmaceutical solutions. DuPont high-performance materials help create safer healthcare environments and protect the health of patients and healthcare providers worldwide. We help enable smarter healthcare and positive patient outcomes.

For more information about Liveo™ solutions for smart wearable devices

Visit liveo.dupont.com – or scan the QR code at right to be taken directly to our wearable medical device solutions web page, where you'll find details on the full portfolio of Liveo™ Silicone Skin Adhesives and Liveo™ Silicone Elastomers.



To learn more about DuPont™ Liveo™ Healthcare Solutions, visit liveo.dupont.com.



Smarter Healthcare.
Positive Patient Outcomes.

DuPont™, the DuPont Oval Logo, and all trademarks and service marks denoted with ™, SM or ® are owned by affiliates of DuPont de Nemours, Inc. unless otherwise noted.
© 2023 DuPont.

The information set forth herein is furnished free of charge and is based on technical data that DuPont believes to be reliable and falls within the normal range of properties. It is intended for use by persons having technical skill, at their own discretion and risk. This data should not be used to establish specification limits nor used alone as the basis of design. Handling precaution information is given with the understanding that those using it will satisfy themselves that their particular conditions of use present no health or safety hazards. Since conditions of product use and disposal are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information. As with any product, evaluation under end use conditions prior to specification is essential. Nothing herein is to be taken as a license to operate or a recommendation to infringe on patents.

Caution: Do not use DuPont materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless the material has been provided from DuPont under a written contract that is consistent with DuPont policy regarding medical applications and expressly acknowledges the contemplated use. The customer is solely responsible to determine whether DuPont products are suited for customer's intended purpose or application and may contact DuPont technical experts for more product details prior to sourcing products. DuPont disclaims liability for any incidental or consequential damages resulting from customer's use of DuPont products. For further information, please contact your DuPont representative. You may also request a copy of DuPont POLICY Regarding Medical Applications H-50103-4 and DuPont CAUTION Regarding Medical Applications H-50102-4.