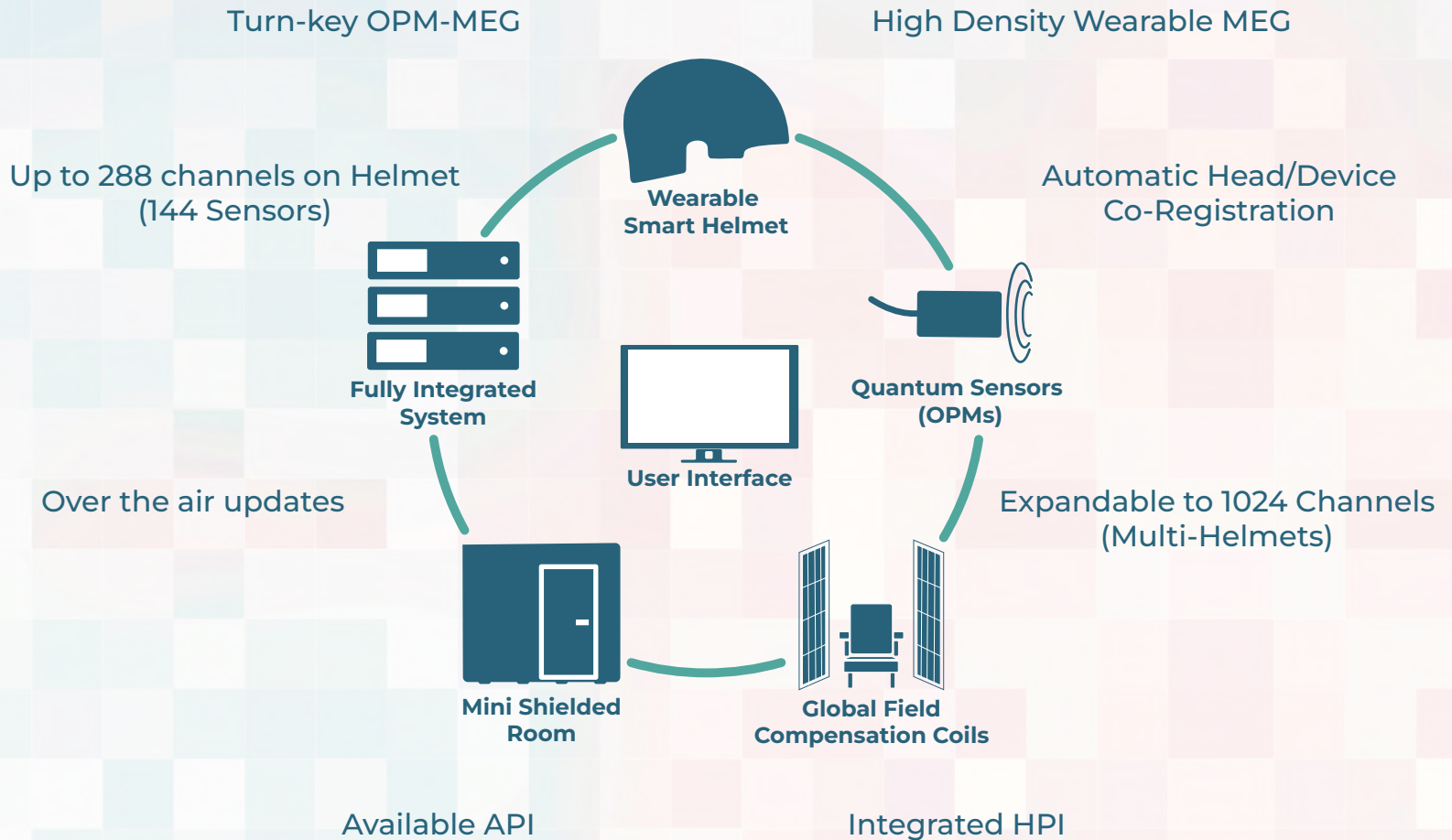




The HEDscan™ system is a compact wearable OPM-MEG (magnetoencephalography) device that addresses the shortcomings of existing cryogenic MEG while broadening its applicability to all age groups and to new clinical paradigms. HEDscan advances the state-of-the-art of MEG through innovations such as the Smart Helmet with automatic sensor localization and head co-registration capabilities, integrated global field compensation coils for dynamic field compensation, and a turn-key modular and scalable hardware platform.





HEDscan Specifications

	Range	Min	Typ	Max
Sensor Magnetic Sensitivity	10 Hz to 130 Hz	8 fT/√Hz		15 fT/√Hz
Sensitivity Bandwidth (3 dB)	DC to	130 Hz		180 Hz
Response Bandwidth (3 dB)	DC to	300 Hz		350 Hz
Dynamic Range		±100 nT		
Frequency Response Linearity	DC to 100 Hz		< 1%	
Amplitude Response Linearity			< 1%	
Sensor to Sensor Cross-talk				< 2%

Smart Helmet	Adult Helmet	288 Channels (144 sensors)	Head Circum - 160-230 mm	Weight = 3 kg (est)
	Child Helmet	184 Channels (92 sensors)	Head Circum - 109-185 mm	Weight = 2 kg (est)
Smart Helmet localization accuracy	< 0.5 mm (radial)	Sensor Standoff (Center of sensing volume to sensor tip)		5 mm
HPI (integrated)	6 Channels	Sensor/Helmet cable bundle length		6.3 m

Analog Inputs (BNC)	4 Channels/Module	Up to 8 modules per system	24 bit	V _{in} = ±10 V
	Sampling Rate		All 32 Ch @ 25 kS/s	Up to 8 Ch @ 125kS/s
Analog Output (BNC)	4 Channels/Module	Up to 8 modules per system	16 bit	V _{out} = ±10 V
Digital Input (37 pin D-Sub)	32 Channels/Module	Up to 8 modules per system	3.3 V or 5 V Logic Level	
Digital Output (37 pin D-Sub)	32 Channels/Module	Up to 8 modules per system	3.3 V Logic Level	

System Data Output Sampling Rate	1 kS/s	System Data Output File Format	.fff, .csv
Control System Chassis (3U 19" Rack Mount)	16 Modules/Chassis	User Interface Computer Platform	Linux

Global Field Compensation Panels	3 orthogonal axis DC		5 first-order gradients	
	Distance between Panels	1.2 m to 1.6 m		
	Small Panels	1 m x 1 m (height adjustable)		
	Large Panels	1.8 m x 1.8 m (height adjustable)		

