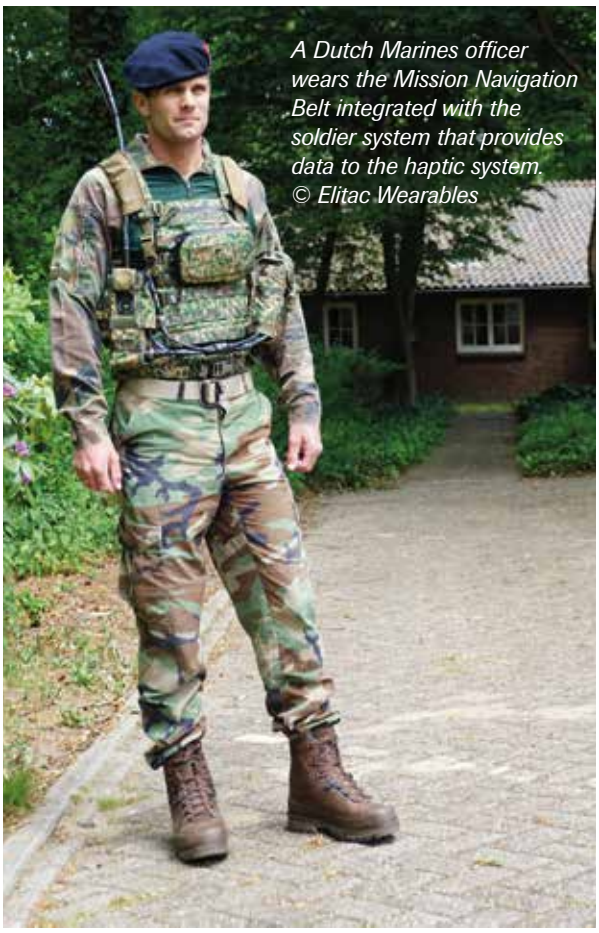

A Dutch Marines officer wears the Mission Navigation Belt integrated with the soldier system that provides data to the haptic system. © Elitac Wearables

operate in two different modes, stand-alone or fully integrated with C4I applications. Its display is sunlight readable, the Smart WristView being compact and light, as it weighs only 140 grams.

Navigating at night without having to look at the compass and checking a map, or switching on a PDA that might reveal your position, is certainly something the warfighter would appreciate. Not having to use his eyes to cope with navigation issues would allow him to maintain a much better situational awareness. In the Netherlands Elitac Wearables B.V. developed the Mission Navigation Belt (MNB), which provides haptic feedback to the soldier, exploiting his touch sense which is definitely much less used than view or hearing. The company won an order by the Netherlands' Army for a first batch of 20 MNBs for further evaluation by the Army and Marines, deliveries having started in early July 2020. The belt plugs into the soldier system, in the Dutch case the VOSS from which it takes the power thus avoiding the burden of an extra battery; the consumption is minimal compared to radio and computer according to Elitac. The VOSS C4I, mostly provided by Elbit Systems of Israel, gives the MNB the next waypoint, the belt providing the direction to the soldier through its seven silent vibration motors, located five in the front sector and two in the back sector. The feedback is provided every 8 seconds, frequency increasing when approaching the target up to one every second when very close, accuracy being estimated at 2-3° on a waypoint with a diameter of 25 meters. The 355 grams heavy MNB exploits the VOSS GPS but is also equipped with an AHRS (Attitude and Heading Reference System) fitted in the belt, providing direction when GPS signals are not available. Elitac Wearables developed the algorithms that activate the motors leading the soldier towards its destination in an easy and intuitive way, navigation cues being felt even in the most critical situations, i.e. when running or riding a motorbike. A patented system allows to ensure appropriate haptic feedback even when the belt is adjusted to fit different sizes. The MNB is fully waterproof, its electronic being IP68, which allows to extend its use also to amphibious troops, full testing being planned in the near future.

As for the export market, the MNB can be easily interfaced with soldier systems different from VOSS if those use the NATO STANAG, however Elitac is ready to adapt it to customers' needs, the system being open for integration in Android-based C4I systems, the export marketing being ensured by Teijin Smart Safety. ■

A close up of the Mission Navigation Belt which has been ordered in a limited batch by the Dutch military for evaluation purposes; it allows navigation without encumbering vision and hearing senses. © Elitac