



MATISS*

ENHANCED HUMAN-MACHINE INTERACTION BY HAPTICS

* MAGneto-Textural Inertial Spinning System

+ WHAT IS MATISS?

The system is a rotary knob which is highly dynamic, 100% programmable in real time, and that can faithfully reproduce force feedback sensations with a passive brake (or hybrid: brake + motor) system. With such properties, the knob transmits concrete, conscious information and, more subtly, enhances the immersive sensation of a simulator or game.

+ APPLICATIONS

- Transmit high-quality information via the sense of Touch, which is generally under-used (for example, by gradually increasing the resistance of a volume knob as the sound is turned up). This is useful in automotive applications, where buttons are safer and just as simple as touch screens.
- “Augment” electrical commands by giving them the same sensations as conventional physically-coupled commands (aircraft, boats, etc.)
- Enhance the immersive and awareness-raising capacities of simulators (joysticks, game controllers, etc.).

+ WHAT'S NEW?

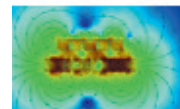
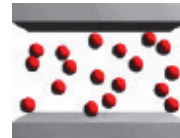
- For a similar factor form, our brake provides a much higher maximum resistance to movement than existing motorized systems, which enables the interface to provide a considerably more dynamic sensory experience.
- The system being fully programmable, all of the sensations of known mechanical systems can be simulated (spring tension, ratcheting mechanisms, freely rotating wheels, static and dynamic friction, unbalanced shafts, etc.). The most appropriate sensation for the information to be transmitted is programmed simply.
- The system's response-time is so fast that it is possible to program different resistances for each direction of rotation without creating the sensation of “play” in the simulated mechanical system.
- It is highly resilient, as it is literally impossible to mechanically “break” the system when force is applied beyond the maximum resistance in rotation: it will recover immediately.



KEY FIGURE

- 6 patents

Magnetorheologic Technology



INTERESTED IN THIS TECHNOLOGY?

Sales contact:

Moustapha Hafez

Moustapha.hafez@cea.fr

+ 33 631 091 643

List, technology research institute

Commissariat à l'énergie atomique et aux énergies alternatives

Institut List | CEA Saclay Nano-INNOV | Bât. 861-PC142 | F-91191 Gif-sur-Yvette Cedex | France

www-list.cea.fr

