02. External Design Features

Objectives

1. Provide a protective housing for MIThrill 2003 system and associated components
2. Allow room for modularity and flexibility in terms of hardware configurations
3. Be unobtrusive—the wearer’s outward appearance is normal, no external electronics
4. Embedded electronics are specific to this garment: include sensors and actuators most useful for user’s activities while wearing the coat
5. Embed a tag (RFID, or device which outputs a constant string) to tell MIThrill what type of clothing is being worn, which systems are in it, and what the user’s activity might be (which classifiers to load)
6. Inject a healthy dose of artistry and design into the wearables field

Design Motivation

1. Long coat looks sleek and modern—all electronics are safely and comfortably housed inside the removable outer shell
2. Fuses 1960’s Courreges style with Oriental trimming for a modern, futuristic appeal and “wearables warrior” look — this is in the spirit of the Borglab
3. Mirrors sleek vision of contemporary designers such as Helmut Lang, Issey Miyake, and Emporio Armani
4. Can be adapted to a men’s design by simply changing shape of outer shell, thus providing design continuity but not ignoring the stylistic differences between men’s and women’s outerwear
03. Internal Design Features

**Hardware**

1. Sensors and actuators: multiple accelerometers, internal and external temp sensors, bend sensors, heating elements, night illumination, IR/Bluetooth/WiFi transmit and receive
2. Embedded MIThril junction(s), wires to components, SAK2, biometrics, RF components, Zaurus
3. Battery Array for low-profile, rechargeable power
4. System recharges while on hanger with shoulder pad electrodes

**Extensions**

1. Climate control: heating/cooling or shape changing elements
2. Flexible storage: size adjusting pockets, lockable
3. Information display: visual, tactile, and auditory feedback
4. Safety: protection from attackers, weather, smog, etc.
5. Fashion: enhancing artistic and cultural aspects of technology design

**Future**

1. Need a wide variety of "garment vehicles" for MIThril system, not just a coat
2. Athletic shirt: integrated electrochemical cooling, sophisticated biometrics, GPS, kinetic energy generation, etc.
3. Business suit: communications-oriented, cellular link, interface to desktop PC, etc.
4. Common ties: MIThril, Media Lab branding, forward-thinking fashion
5. MIThril 2003 still not ideal: too bulky, too many cables, not consumer friendly