

Wearable Power Modules (WPM)

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What is WPM

- **Wearable Power Module (WPM) is a modular solution to enhancing human muscle capability with clean engine power while batteries and fuel cells don't have enough energy density for heavy duty tasks.**
- **WPM is designed to collaborate with mobile data services (IoT/M2M) and wearable technologies for power applications.**
- **Centerpiece of WPM is the power module (PM). PM could be used to power various modular tool adapters or mobile modules for transportation applications (Fig. 1).**

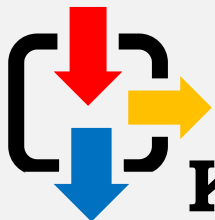
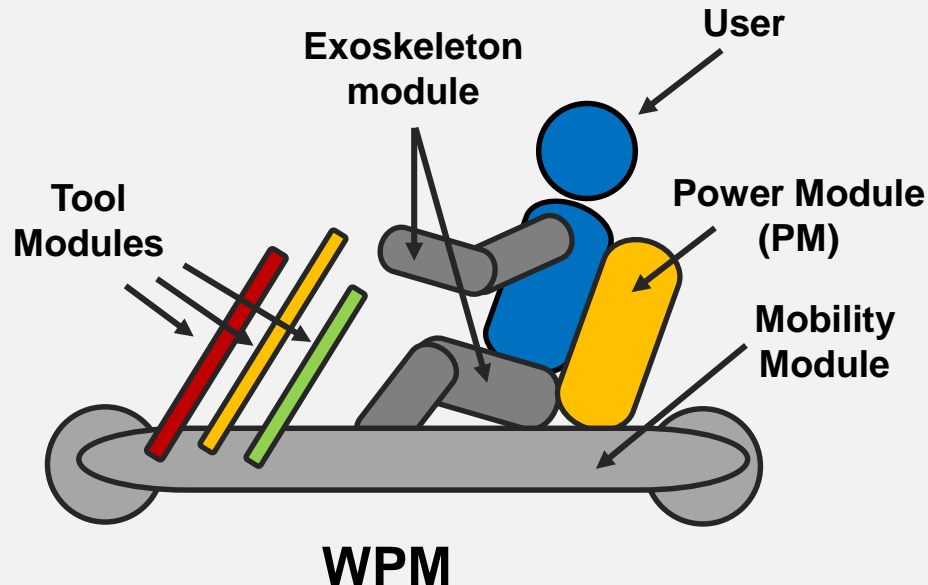
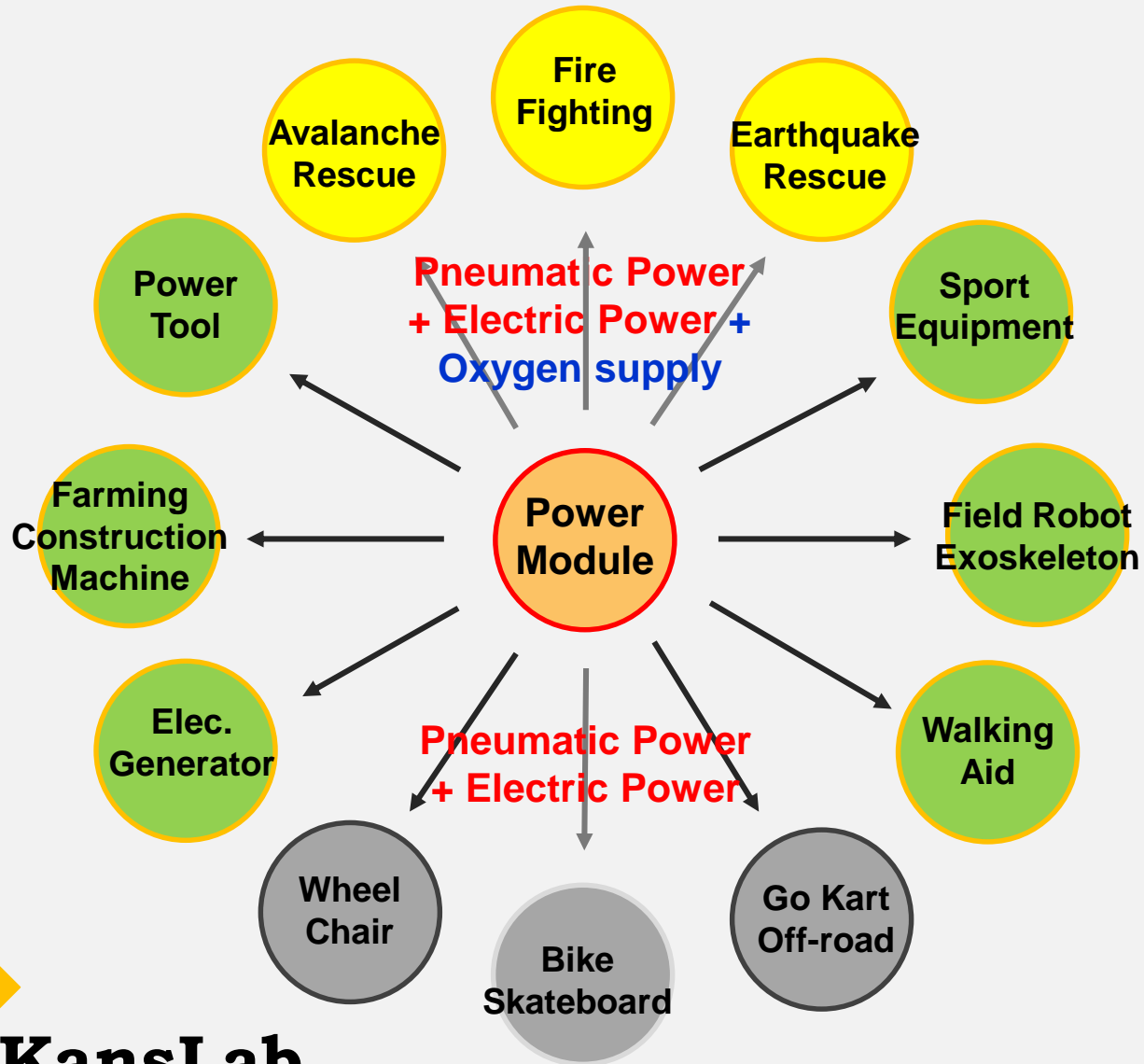


Fig. 1: Wearable Power Modules



Power Module with light FAI engine

- **Wearable power applications require power sources in light weight. FAI engine is possible to be built in light Polymer material and ideal for wearable applications (Fig. 2).**
- **Most of time FAI is operating in high gas expansion ratio (1:30+) for increasing thermal efficiency and decreasing exhaust pressure which means low operating temperature.**
- **Engine doesn't generate air compression heat. Compressed air is prepared by separate or external device.**
- **High pressure air absorbs heat during expansion which further reduces engine temperature.**
- **Light FAI structure is ideal to be used to power wearable tools and personal mobility applications (Fig. 3, 4).**

Fig. 2: Light FAI with Pneumatic Output

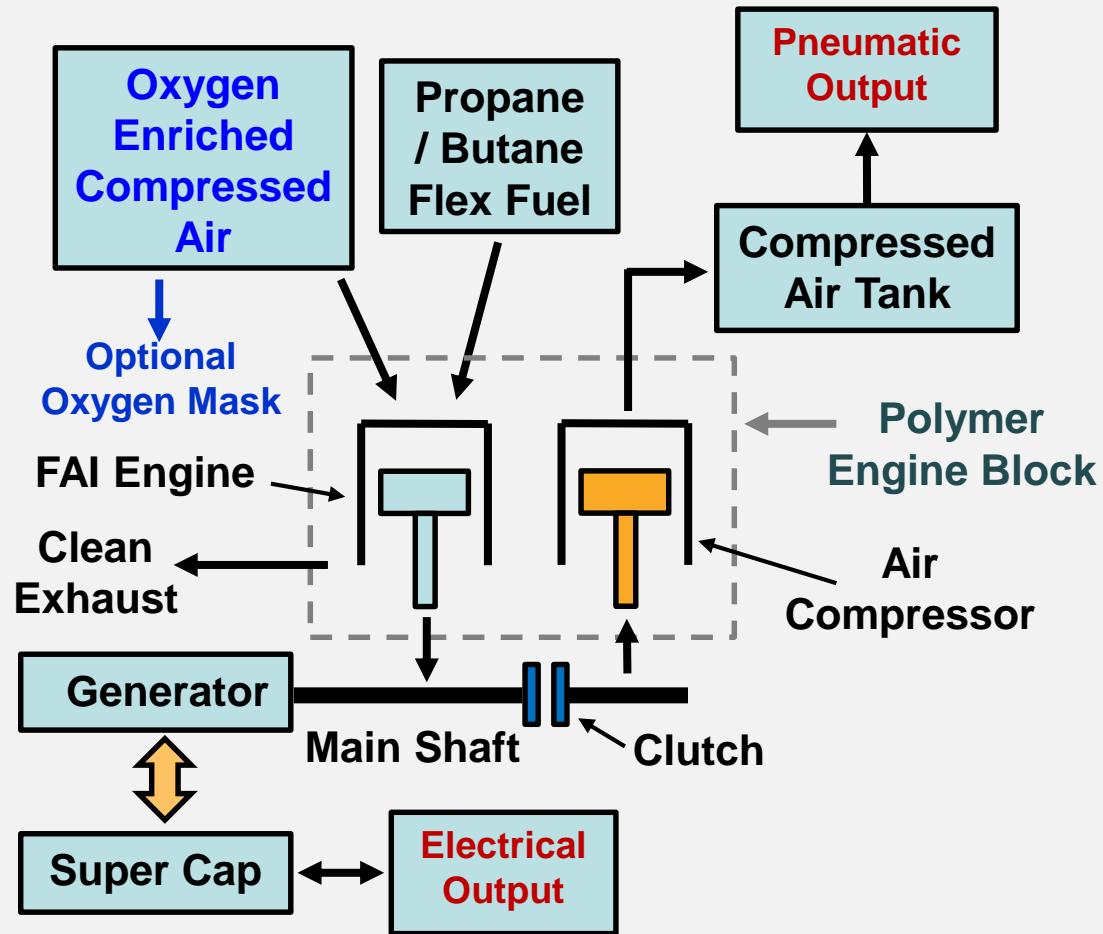


Fig. 3: Sample Application - Light folding Transporter

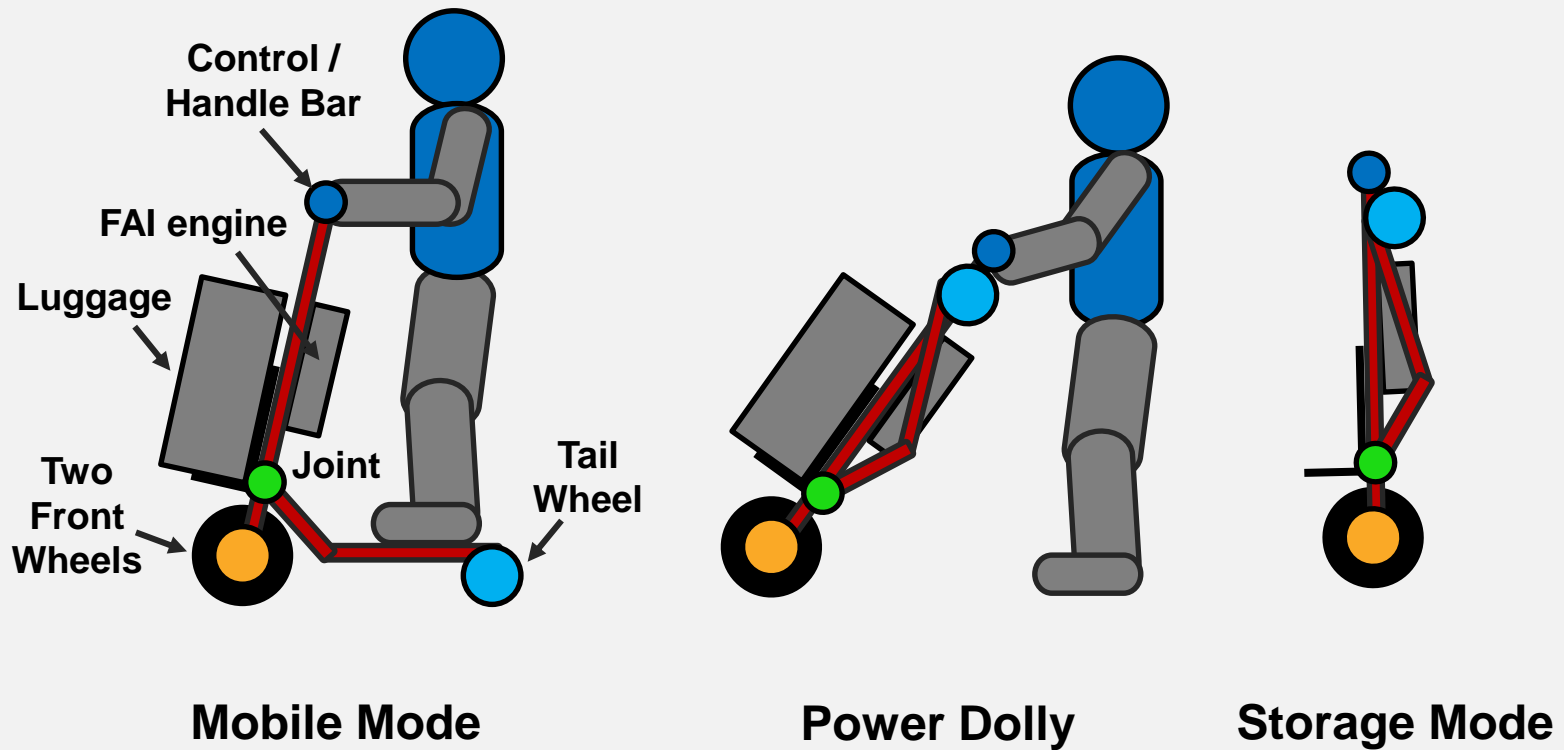


Fig 4: Sample Application - Mobile Chair

