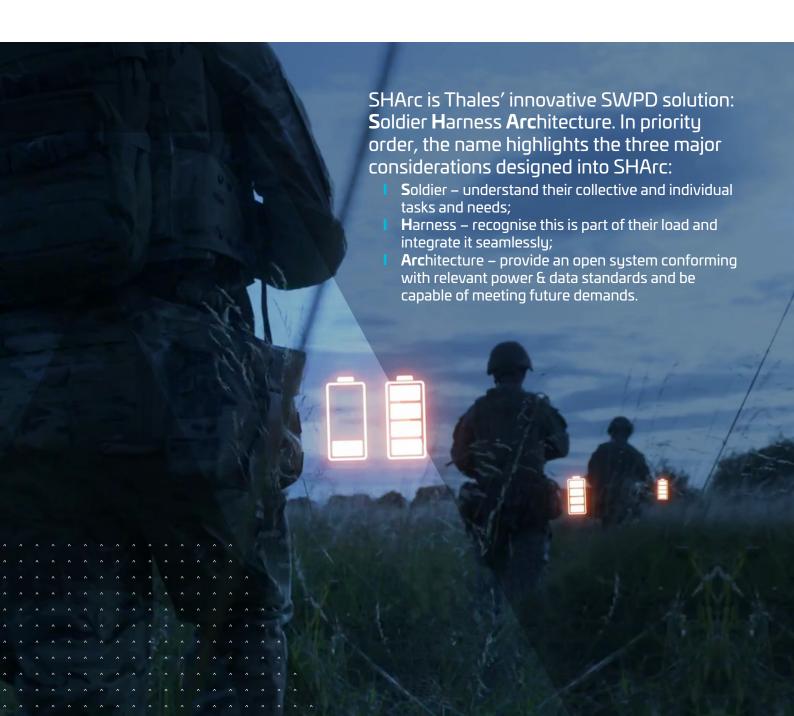THALES

SHArc
Soldier Worn Power & Data

Delivering a truly effective Soldier Worn Power & Data (SWPD) solution requires two crucial elements: a hub to control the "Power & Data" and a packaged cable & connector assembly to manage the "Soldier Worn" aspect.

SHArc is Thales' innovative SWPD solution: **Soldier Harness Arc**hitecture. In priority order, the name highlights the three major considerations designed into SHArc:

- **S**oldier – understand their collective and individual tasks and needs;
- **H**arness – recognise this is part of their load and integrate it seamlessly;
- **Arc**hitecture – provide an open system conforming with relevant power & data standards and be capable of meeting future demands.

SHArc
Soldier Worn Power & Data

SHArc provides the infrastructure to support the integration of legacy and future devices fitted around the user to form a tailored Soldier System.

FLEXIBLE: There is no single, one-size-fits-all SWPD system; users' needs are too varied and complex. SHArc offers true flexibility in cable, connector and battery type as well as device and connector location. User configurations can be controlled and managed as far down as unit level.

INTEGRATED: SHArc is fitted into any belt & yoke so that it can be seamlessly integrated with existing load carriages and protection systems. It offers an innovative feature allowing rapid transition between protection ("dress") states at the same time, retaining the maximum amount of belt "real estate" for users.

OPEN: SHArc conforms to the GSA (Generic Soldier Architecture) standard and can support legacy devices through the use of embedded adaptors.

CONTROL: SHArc is designed to be used by both Commanders and Riflemen. The Commander system supports a larger number of devices which can observe and manage the Riflemen systems through the use of the *SHArc App* hosted on any suitable display device.

CAPABLE: The **F**lex**i**ble **S**oldier **H**ub (**FiSH**) at the heart of the SHArc is highly capable, offering two dedicated power ports with an internal charging capability. Sharing data amongst connected devices is achieved, with the seven Power-Data ports that accommodate devices and sub-systems, such as weapon-, helmet- and vehicle-mounted systems.

SHArc Features:

- **Flexible:** Can be reconfigured to meet diverse & changing operational user needs.
- **Intelligent Power Management:** Commanders are able to control the power distribution around the team, allowing the swapping of batteries to optimise power distribution within the team and enabling the Logistics chain to easily anticipate future demand.
- **Simple Controls:** The on/off switch allows simple power control and system reset. The SHArc App allows the control of the team's power settings.
- **Charging & power ports:** Provides a safe and efficient recharging facility for all users.
- **FiSH metal casing:** robust, enduring EMC performance with effective heat sinking.

- **Variants:** Supports Riflemen to Commander step-up, integration of future devices and power sharing.

Major Benefits:

- Reduces user power load over a BattleField Mission through shared power burden.
- Reduces diversity of battery types
- Simplifies integration of future digital devices using an open system approach.
- Reduces cognitive burden by automating the routine power & data tasks.
- Substantially reduces Whole Life Costs through Intelligent Power management.
- Minimises the impact on user load carriage "real estate" with a seamlessly integrated solution.

Technical Specifications:

SHArc is comprised of a number of elements (hub, harness, cables, battery housings/connectors & app) allowing specifications to be configuration- or usage-dependent.

Illustrative figures for Commander configurations[1]:

Weight : Hub & Cables		
Weight (Commander)	800g	
Weight (Rifleman)	500g	
Flexible Soldier Hub (FiSH) Specifications		
Immersion	2 metres for 60 minutes	
EMC	DEF STAN 59-411	
Shock & vibration	DEF STAN 00-35	
Size	126 * 112 * 19.5 mm	
Position	Belt & alternative load carriage solutions	
Weight	400g	
Power consumption	400 mW (typical)	
Inputs	Intelligent Power Ports (charging enabled)	2 (8-36V, 5A max)
	Power-Data Ports	7 (USB 2.0 + 8-36V, 5A max)
CPU	Low Power ARM (Cortex A7 with Extra Security Features)	
Memory	512MB RAM, 8GB non-volatile memory (NVM capacity variable by request, up to 32GB)	
Belt & Braces		
Fixings	Laser-cut molle system Adjustable connector positions	
Weight	Belt - 556g	Yoke - 84g	Brace - 60g

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[1] Specifications based on specific configuration assumptions and a Cdr FiSH for both Rflmn & Cdr. Cdr SHArc to support 6 devices and Rfln SHArc to support 3 devices), excluding batteries, and deducting weight of replaced items (e.g. VIRTUS belt & yoke)

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