FRS Electric Vehicle (EV) 'IAIIM' Response protocol

I Identify

- **HAZARDS** – conduct DRA & implement proportional controls
- **Vehicle MAKE/MODEL/YEAR & type** (HEV/PHEV/EV)
- DRIVER & **obtain history**/timeline, battery **State of Charge (SOC)?**
- **Refer to Emergency Response Guide (ERG)** via QR code or App

A Assess

- **Stability of vehicle** (on 4 wheels, side, roof?)
  - Extent of **damage to vehicle** (LIGHT/MEDIUM/HEAVY). SRS activated?
- **Casualties, Conduct TST** Not injured/Minor/P3 '**U-STEP-Out'** or Major/P1/P2 '**quickest, appropriate extrication'. Critical** Injury or Hazard? **'Snatch rescue'**
- **Warning symbols on dashboard** and **Signs of Thermal Runaway:**
  - **Noises** – over pressure, whistling or popping?
  - **Vapours** - light and/or dark ('Gassing off')? **Gas Monitor, RPE & 'Hot Zone'**
  - **Jet like flames**, directional flaring?
  - **Battery Temperature** - rising >10^0C/min or >60^oC!! Record & Monitor

I Immobilise

- **Approach at 45º** – **not from front/rear**! **Risk of unexpected propulsion**
- Insert 'Emergency Plug' (if available) into charging port
- **CHOCK wheels** – all if possible
- **Apply BRAKE**
- **Select 'PARK'**

I Isolate

- **Select 'STOP' or 'OFF'**
- Take **control of keys/fobs/phone** (place **>5m or in Faraday pouch**)
- If on charge, **isolate charger & disconnect charging lead**
- **Isolate HV battery using LV method** (whichever is fitted):
  - **Remove First Responder loop** (or cut), **Pull Fuse** or **operate Service Disconnect** (see over)
  - If can't do the above, disconnect -ve lead on LV battery, but **consider need to operate LV systems first?** Negates HV Battery Management System!
  - **Responders in the dynamic environment should not touch or remove the HV Manual Service Disconnect (orange plug)!**

M Monitor

- **Throughout incident/investigation monitor** (Safety Officer?) for signs of Thermal Runaway:
  - **Noises** – over pressure, whistling or popping
  - **Visual** – light and/or dark vapour
  - **Gas monitoring** – use multi gas detector (also during blanket removal)
  - **Battery Temperature rise** – use Thermal Image Camera on underside of battery (**rising >10^0C/min or >60^oC!!**)
  - **Liquid discharge** – acids? Firefighting media? Contain runoff

Handover residual risks (stranded energy, thermal event & reignition, acids) and advise **Recovery operator to monitor for signs of Thermal Runaway during transportation**, if TR then stop, ring 999 request Fire Service. Advise to **segregate** (>15m from combustibles) **or quarantine** (Containment Unit, concrete bay and/or blanket) & **Monitor frequently for signs of thermal activity/reignition.**

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