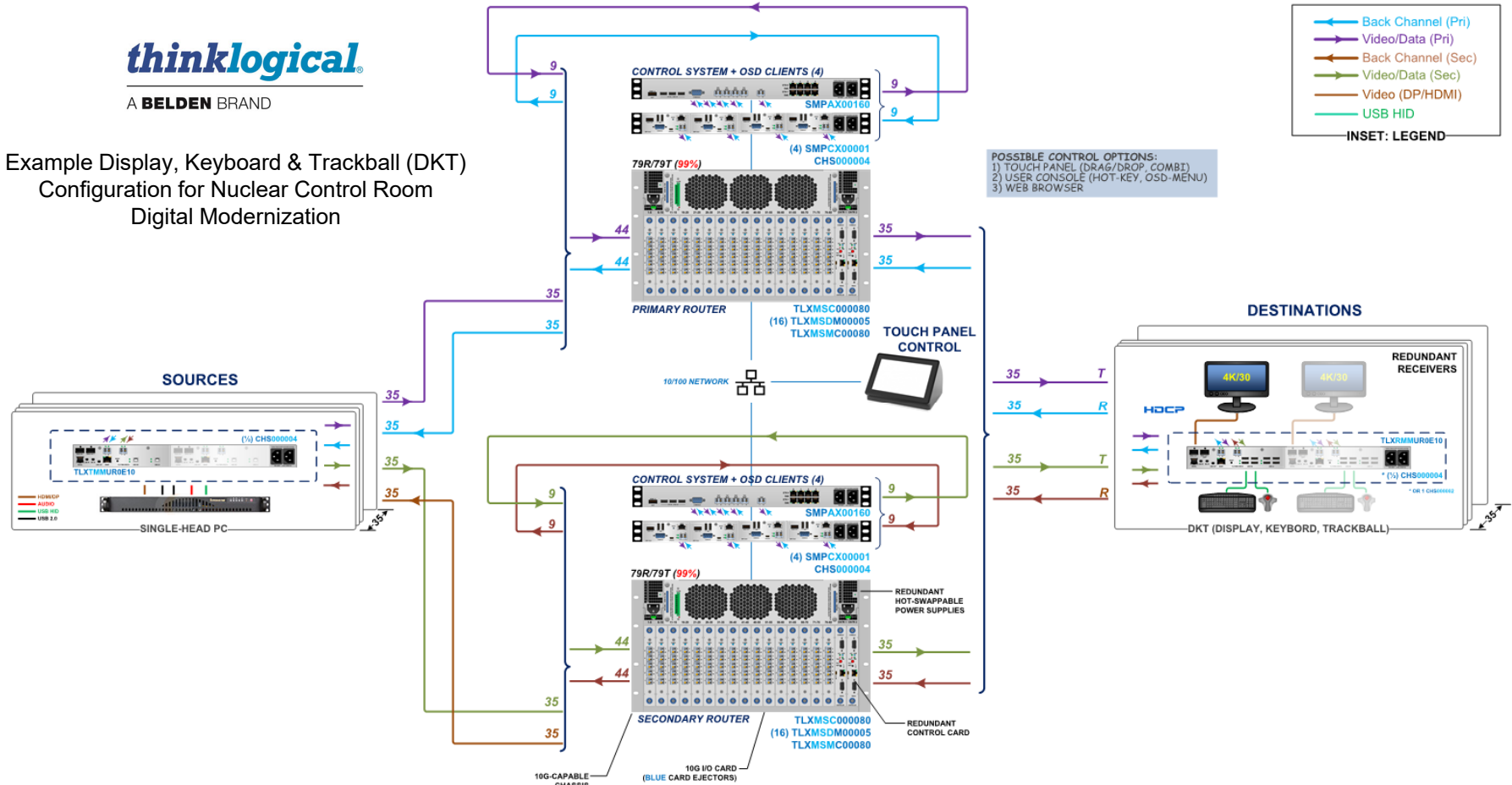**thinklogical**
A **BELDEN** BRAND

Example Display, Keyboard & Trackball (DKT) Configuration for Nuclear Control Room Digital Modernization

INSET: LEGEND

- Back Channel (Pri)
- Video/Data (Pri)
- Back Channel (Sec)
- Video/Data (Sec)
- Video (DP/HDMI)
- USB HID

POSSIBLE CONTROL OPTIONS:
1) TOUCH PANEL (DRAG/DROP, COMBI)
2) USER CONSOLE (HOT-KEY, OSD-MENU)
3) WEB BROWSER

- • Solution shown features a fully redundant Display, Keyboard, Trackball "DKT" infrastructure. 35 single-screen PCs are connected to redundant matrix switches via diverse fiber paths. The diverse fiber paths then run to 35 operator workstations.

- • The left side of the drawing shows source PCs connected to Thinklogical DKT (Display, Keyboard, Trackball) transmitters via standard copper cables. These cables are video, analog audio, keyboard, and trackball. The Thinklogical transmitter converts the electrical signal to an optical signal and distributes it via diverse fiber paths to duplicate, redundant Thinklogical matrix switches seen in the center of the drawing.

- • Both matrix switches work synchronously, switching sources to destinations as requested by control system. In the event of a failure the "backup" switch becomes the primary. Each matrix switch is controlled by a dedicated control system. Both control systems are running synchronously.

- • Fiber then runs from each matrix to each receiver. The optical signals are converted back to electrical at the Thinklogical receiver and distributed to the Display, Keyboard and Trackball (DKT). Should any fiber path or matrix switch fail, the system automatically switches to the back up.

- • Please note that sources can be any number of PCs (with any number of Displays) or data inputs and destinations (operator workstations) can handle any number of video displays from these multiple sources as required. The Thinklogical matrix switch is non-blocking, meaning any source can be displayed at multiple destinations simultaneously without technical restrictions. The control system is configured to allow source selection to destination switching by an operator only as allowed by the system administrator based on security or policy protocols.

- • The Thinklogical transmitters, matrix switches and receivers all utilize N+1 redundant load sharing power supplies for reliability and resiliency.