

**Subject: Cyber Security Advisory – Secure Usage of 3<sup>rd</sup> - Party Media/Fiber (Advisory No. 27)**

**Context.** It has been observed in a recent study that majority of Govt organizations rely on 3<sup>rd</sup> party media (fiber optic connectivity) for internet and related intranet services. Fiber optic connectivity may be prone to security issues such as inline fiber tapping, bending splicing attacks and misconfigurations at service provider end etc. Conversely, use of dark fiber (also known as unlit fiber) is more reliable and resilient with inbuilt security features and structured cost. The advantages of utilizing dark fiber is highlighted in the ensuing para.

2. **Dark Fiber.** Dark fiber is conceptually an unused optical fiber, available for use in fiber-optic communication. It is originally the potential network capacity of telecommunication infrastructure that may be leased from services to ensure security, redundancy, increased performance and predictable cost structure. Other than performance/cost-saving benefits, dark fiber provides a physically private network that augments organization's data, privacy and network security concerns.

3. **Recommendations.** Above in view, it is recommended that Govt organizations may consider hiring of dark fiber as a long-term policy for sensitive/intranet services. In case of existing/unavoidable circumstances of dependency on 3<sup>rd</sup> party media, organizations must incorporate counter-measures like application level security. End-to-End communication security through VPN (with regular periodic change of VPN keys) and multi-factor authentication mechanisms as deemed feasible.