INVENTION DISCLOSURE

1.   **Invention Title.**

     N+0 Cable Architecture with Home Run Legacy Return

2.   **Invention Summary.**
     A Cable architecture that provides node + 0 amplifiers in cascade for downstream signals, but cascaded upstream amplifiers for legacy upstream. This configuration allows AC powering, allows backwards compatibility, provides low cost optics and electronics, and enables pay-as-you-grow.

3.   **Invention Description**.

     a.   **Describe the invention in detail.**
          See below

     b.   **Why was the invention developed? What problem(s) does the invention solve? How is it better?**
          Solves the system design problem of backwards compatibility, low cost, and future expansion for greater bandwidth.

     c.   **Briefly outline the potential commercial value and customers of the invention.**
          Very large. May not be adopted as initial configuration on rebuilds, but could be adopted as a configuration before finally going to fiber to the home. This is much more cost effective than to fiber to the home.

4.   **HOW is this invention different from existing products, processes, systems?**
     Not known.