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Low-frequency observation of collimated 100 kpc twin jet in an extended S-shaped RG

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Giant radio galaxies (GRGs) that exhibit distorted shapes are among the most exciting objects in radio astronomy. However, there are only a few S-shaped GRGs discovered till now. We report the disclosure of an S-shape morphology of a GRG revealed in dedicated low-frequency observations. This GRG is powered by a billion solar mass black hole from which vicinity emerges well-collimated and knotty jets, each of ~ 100 kpc in length. The entire radio structure, likely due to effective jet precession, is less than 50 Myr old, has a power of $\sim 6E24$ W/Hz at 1.4 GHz, and morphologically is neither pure FR I nor FR II type. Moreover, due to its peculiar S-shape, the jets of this GRG are not submerged in a diffuse radio cocoon. Therefore, this source is suitable for addressing the intriguing issue of S-shaped radio galaxies and understanding the large-scale jets of the GRGs in general.