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# Leveraging existing open-source software as core building blocks for a community-driven digital twins of the ocean infrastructure

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The growing interest in digital twin technology has excited numerous initiatives, also in the realm of the Earth system sciences; however, time-constraint funding often results in infrastructure solutions that, despite aiming for e.g. accessibility and interoperability, at worst remain effectively proprietary and centralized. This contribution proposes an alternative: a community-driven approach to building a digital twin of the ocean infrastructure that leverages already existing mature open-source technologies. Specifically, we advocate using Git repositories for the collaborative development of digital twin "apps"alongside Project Jupyter software, which provides interactive computing environments essential for handling heterogeneous data sources, exploring large datasets, and conducting numerical simulations. We also aim to stimulate a discussion about the need for bridging the gap between research data management and scientific computing – an important step towards creating a sustainable, scalable, and performant digital twin ocean infrastructure that would foster human creativity, and accelerate knowledge generation and decision-making within what might be called a digital twin use case cycle.

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