

The U.S. Bureau of Reclamation, NASA, & Freelancer.com seek programming experts to speed up code in the US\$300,000 'Divide and Conquer Challenge'



SYDNEY, September 15th, 2021: Freelancer Limited (ASX: FLN) (OTCQX: FLNCF), the world's largest freelancing and crowdsourcing marketplace by number of users and projects, together with the U.S. Bureau of Reclamation & NASA Tournament Lab host the Divide and Conquer: Modeling Large-Scale Hydraulics Faster Challenge. This competition, focused on improving how quickly and efficiently engineers can map flow hydraulics and sediment transport in rivers and reservoirs, looks to test the most inventive in an effort to manage and protect the water of the American public as efficiently as possible.

Reclamation, the largest wholesaler of water in the United States, has found the current models for hydraulic and hydrologic process simulation are running at 60% to 80% of total execution speed. This single factor is causing a significant slow down as Reclamation faces ever-increasing demands in water and hydropower. The *Divide and Conquer Challenge* is the answer to fixing this bottleneck.

In the first phase, the *Divide and Conquer Challenge* is reaching out to the freelance community to create a **new linear equation sparse matrix solver** that replaces Reclamation's current solver.

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Entrants must find innovative ways to optimize and speed up the code, for example by parallelization and/or using GPU technology. **In the second phase, solutions that meet the parallelization, stability, and convergence baselines are eligible to integrate their parallelized solution into Reclamation's two-dimensional flow hydraulic and mobile-bed sediment transport model (SRH-2D).** Phase 2 submissions will be judged on the parallel speedup achieved using benchmark flow cases for up to 32 cores.

More details are found [on the challenge website](#).

Phase 1 and Phase 2 offer a prize purse of US\$100,000 and US\$200,000 respectively, for a total prize purse of US\$300,000. Up to four solutions will share in the Phase 1 prize purse if they meet all requirements to qualify. Similarly, the second phase prize purse will be split between the top two solutions, unless only one team meets the criteria laid out in the challenge, in which case that team will be the sole winner of the \$200,000 USD prize.

"Freelancer.com is challenging linear algebra experts, programmers, mathematicians, physicists, engineers, and GPU developers from around the world to enter the *Divide and Conquer Challenge*. In addition to US\$300,000 in prizes, you'll be helping the US Bureau of Reclamation manage and protect the water supply. We've also got hundreds of thousands of dollars in more prizes to be won helping US Government departments in the fields of UI/UX design, data privacy, power engineering, data science, computational fluid dynamics, software development, advanced manufacturing, machine learning and information security," said **Freelancer Chief Executive, Matt Barrie**.

To register for the Divide and Conquer Challenge, visit:

<https://www.freelancer.com/contest/1989283>

To see competitions in other areas, visit:

<https://www.freelancer.com/nasa>

About Freelancer ®

Twelve-time Webby award-winning Freelancer.com is the world's largest freelancing and crowdsourcing marketplace by total number of users and projects posted. More than 50 million registered users have posted over 20 million projects and contests to date in over 2,000 areas as diverse as website development, logo design, marketing, copywriting, astrophysics, aerospace engineering and manufacturing. Freelancer owns Escrow.com, the leading provider of secure online payments and online transaction management for consumers and businesses on the Internet with over US\$5 billion in transactions secured. Freelancer also owns Freightlancer & Loadshift, enterprise freight marketplaces with over 99 million kilometres of freight posted in 2020. Freelancer Limited is listed on the Australian Securities Exchange under the ticker ASX:FLN and is quoted on OTCQX Best Market under the ticker FLNCF.

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About U.S. Bureau of Reclamation

Established in 1902, the Bureau of Reclamation is the largest wholesaler of water in the United States, bringing water to over 31 million people and the second largest producer of hydropower in the country. Reclamation's mission is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public. Reclamation's Sedimentation and River Hydraulics Group studies how rivers and reservoirs respond to changes in river flow, sediment supply, or channel modification. The group prepares studies for a variety of purposes including stream habitat restoration, protection of streamside infrastructure, and reservoir sediment management and long-term sustainability. Many studies focus on Reclamation facilities, including their potential impact on river channels and endangered species habitat, recreation, wetlands, and cultural resources. For example, sediment studies of rivers and reservoirs link changes in stream flow and sediment supply to processes controlling changes in river channel shape, alignment, lateral migration, and bank erosion.

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