Broadbanding Australia

NBN Co Limited

Media Release

NBN Co uses advanced maths to optimise network design/reduce costs

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NBN Co, the company set up to design, build and operate Australia's national wholesale-only, high-speed broadband network, has awarded a contract to Biarri, a commercial mathematics company, to supply network design optimisation software to support development of efficient, lower cost network construction plans.

Chief Technology Officer at NBN Co, Gary McLaren, said that the Australian Government's plan for the NBN presents a unique network design challenge in terms of scale, complexity and technical approach. Biarri is an Australian commercial mathematics company that has developed a Network Design Optimisation Engine which is being applied to the NBN.

Gary McLaren said: "Biarri has already demonstrated the engine's capability and benefits on projects for NBN Co. It quickly generates low-cost fibre network designs based on the requirements of the reference architecture. It can determine optimal fibre area boundaries, the position of fibre hubs, and the layout and route of distribution and local fibre.

"Based on modelling that NBN Co and Biarri have undertaken in the First Release Sites, it is possible that the optimisation algorithms could save substantial costs in both design and construction.

"NBN Co is proud to support smart local technologies and companies that have the potential to improve the NBN network design and build a better network. Biarri is an Australian technology company that brings the power of mathematics to bear on real world problems. They have demonstrated the value of their mathematical engines to optimise network layouts and we plan to use their mathematical modelling capability across a range of areas," he said.

Joe Forbes, Co-founder and Director of Biarri, said that the Network Design Optimisation Engine incorporates a unique arrangement of mathematical techniques and engines.

"Integer programming approaches underlie a number of the engines and they incorporate algorithms to handle the complexity arising from the size of the network, reference architecture rules and need to re-use existing infrastructure," Mr Forbes said.

The initial purchase order for the service is $6.5 million, with the potential to extend over 8 years.

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