

REQUEST # 66681

Geospacial Positioning for Underground Environments

RESPONSE DUE DATE: [December 6, 2010](#)

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SOLUTION PROVIDER HELP DESK

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Opportunity

Licensing, proof of concept leading to scale-up to manufacturing, joint development

- The RFP Sponsor is not necessarily looking to acquire new technology to develop a product but is interested in advancing the technology to a point that it becomes commercially available
- Successful Solution Providers may have the potential to offer the technology to other customers in order to increase scale and economy

Timeline

Phase 1 – Technology evaluation (3 months)
 Phase 2 – Prototype development (3 months)
 Phase 3 – Proof of concept (3 months)

Keywords

Geospacial positioning

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REQUEST FOR PROPOSAL DESCRIPTION

NineSigma, representing **Anglo American**, invites proposals **for the development of a reliable, single pervasive technology that allows for instantaneous and highly accurate 3-dimensional geospacial positioning and orientation information in an underground mining environment.**

The successful technology will:

- Operate to a depth of 4 km below the surface
- Be accurate to ± 2 cm
- Have, if relevant, receiver technology that will be passive, waterproof, acid resistant, intrinsically safe and small enough to be comfortably attached to a person without restricting his movement
- Rely on minimal infrastructure and maintenance support – typically set up once and use forever
- Have no adverse health effects to users

BACKGROUND

Typical underground mines can span an area of 100 km² and can be as deep as 4 km. Virgin rock temperatures can reach 60°C.

In the underground mining industry there is a need to know, upon demand, the precise location of people, machinery, inventory and tools in both known and unknown areas of a mine.

In addition, one would like to utilize the proposed technology to reliably and safely guide and navigate autonomous vehicles, and to interpret positional data, at sub-second intervals, to infer speed, acceleration and heading.

An equivalent technology in the open air environment is the space-based global navigation satellite system that provides reliable 3-dimensional (3D) positioning information at all times anywhere on earth.

APPROACHES NOT OF INTEREST

The following approaches are not of interest:

- Multi-sensor approaches – *solution to be a single sensor*
- Line of sight solutions – *solution to be pervasive and impervious to surrounding rock and humidity*
- Technologies requiring continued or repeated set up as the mine develops and progresses

- The IP status around the proposed technology
- Preferred business arrangements (licensing, joint development, supply etc...)

Examples:

I represent a **company** with technology which should provide a solution ready for testing and transfer to commercial use.

I am an **academic researcher** with technology which should provide a solution but that requires further research and development to ready it for transfer to commercial use.

ANTICIPATED PROJECT PHASES OR PROJECT PLAN

NineSigma's client will select compelling proposals for preliminary direct discussions to further assess the technology and determine possible next steps that may include:

Phase 1 – Technology evaluation

- Assess technology fundamentals and commercial viability

Phase 2 – Prototype development

- Develop bench-scale solution and test in a controlled environment

Phase 3 – Proof of concept

- Develop a prototype for use in a live mining environment and evaluate

CRITERIA FOR MOVING FROM PHASE 1 TO PHASE 2

Satisfy list of predetermined technical and commercial criteria.

APPROPRIATE RESPONSES TO THIS REQUEST

Responses from companies, academic researchers, other research institutes, consultants, entrepreneurs, or inventors are welcome.

Appropriate responses will use the [proposal template](#) and address the following:

- Technology outline as applicable to the mining industry
- Features of the proposed strategy that will achieve the stated aims
- Availability of technology examples, if applicable
- Data demonstrating achievement of the technical specifications, if available
- Cost and / or budget estimates

RESPONDING TO THIS REQUEST

NON-CONFIDENTIAL DISCLOSURE

By submitting a Response you represent that the Response does not and will not be deemed to contain any confidential information of any kind whatsoever.

Your Response should be an executive summary (about 3 pages). The Response should briefly describe the technical approach and provide information on technology performance, background, and description of the responding team and their related experience.

By submitting a Response, you acknowledge that NineSigma's client reserves the sole and absolute right and discretion to select for award all, some, or none of the Responses received for this announcement. NineSigma's client also may choose to select only specific tasks within a proposal for award. NineSigma's client has the sole and absolute discretion to determine all award amounts.

RESPONSE EVALUATION

NineSigma's client will evaluate the **Response** using the following criteria:

- Overall scientific and technical merit of the proposed approach
- Approach to proof of concept or performance
- Potential for proprietary position (i.e., is the technology novel or protectable)
- Economic potential of concept
- Respondent's capabilities and related experience
- Realism of the proposed plan and cost estimates

The client will contact respondents with highly responsive proposals for next steps.