NINESIGMA

Request for Proposal

NineSigma – Connecting technology seekers with solution providers around the globe

# REQUEST #4258345

## *Alternative technologies for cutting timber*

**RESPONSE DUE DATE**: **26 September 2014**

**MANAGER: Darren Coomber, Ph.D.**

**SOLUTION PROVIDER HELP DESK**

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**Opportunity**

Supplier Agreement, Licensing, Product Acquisition

**Timeline**

Phase 1 – Proof of concept / demonstration of approach using pine/eucalyptus timber 6 - 12 months
Phase 2 – Site trials in South Africa 18 - 24 months

**Financials**

Phase 1 – Merensky can offer access to raw materials/ facilities
Phase 2 – To be negotiated, preference is for a supplier agreement

## REQUEST FOR PROPOSAL DESCRIPTION

NineSigma, representing **Merensky Timber Pty Ltd, a major South African forestry company**, invites proposals for alternative technologies to saw blades to process green Pine and Eucalyptus timbers.

The successful technology will:

- Cut green logs of 15cm to 50cm diameter
- Have a cutting profile width of less than 4mm
- Have a cutting speed through full size logs of greater than 50 m/min
- Be suitable for use in an industrial manufacturing environment

## BACKGROUND

Merensky manages plantations, sawmills, and timber processing and distribution operations for Pine and Eucalyptus timber in South Africa. Current sawmilling of green logs uses standard band and circular saws to deliver timber boards with lengths 2.4-6.6m, width 81-240mm and thickness 21-81mm that undergo further processing prior to use.

Across the entire processing chain, the greatest timber loss occurs during the milling of the green logs. These losses arise from factors associated with standard saw blades such as:

- timber wastage caused by the width of the saw cut (kerf) which is dependent on the blade width, set of the saw teeth and blade wobble
- rejection of timber boards due to non-conforming profiles resulting from warping in the band saw blade
- rejection of boards caused by dimensional inaccuracies resulting from worn or dull saw blades.

Additionally, both time and labour can be lost during processing because of the need to change and sharpen blades, or stoppages caused by broken or jammed blades.

Merensky seeks to find alternative technologies to saw blades for the cutting of green timber.


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Merensky seeks to develop partnerships with organisations having existing or near to market technologies that will enable them to maximize timber recovery from each log, provide a higher quality product to end-users and reduce sawmill stoppage time.

Preferred respondents will be able to demonstrate proof of concept of their technology for timber cutting.

## POSSIBLE APPROACHES

Possible approaches might include, but are not limited to:

- Laser systems for timber cutting, milling
- Water jet cutting systems
- Ultrasonic systems
- Cutting systems for other bulk materials such as steel, stone etc that could potentially be applied to timber

## APPROACHES NOT OF INTEREST

The following approaches are not of interest:

- Improved blade technology including harder wearing, thinner or low warp blades
- Solutions that are not suitable for a manufacturing environment that contains significant inflammable material.
- Solutions that generate a significant volume of waste water

## ANTICIPATED PROJECT PHASES OR PROJECT PLAN

Phase 1 – Proof of concept in timber cutting using client specific timbers. Data could be obtained from another sawmill or operation using similar timbers. Merensky can offer access to materials/ facilities for selected technologies.

Phase 2 – South African implementation of technology

## CRITERIA FOR MOVING FROM PHASE 1 TO PHASE 2

Successful trials in Phase 1 that meet required criteria and are deemed commercially viable for the clients application.

## APPROPRIATE RESPONSES TO THIS REQUEST

Responses from companies (small to large), academic researchers, other research institutes, consultants, venture capitalists, entrepreneurs, or inventors are welcome.

Appropriate responses will be submitted through NineSights and address the following:

- Non-confidential description of proposed technology/material/ingredient/approach
- Technical maturity of the approach
- Supporting data
- Intellectual property
- Budget, timeline and deliverables for Phase 1

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

I represent a **company** with laser system for decorative timber cutting which could be adapted to meet the industrial scale requirements of the RFP.

I represent a **small company or academic institution** with technology shown to precisely cut various materials at high speed which could be adapted to the address the RFP requirements.

## SUBMITTING A RESPONSE

All proposals should be submitted online at NineSights, the NineSigma open innovation community, according to the instructions in the Proposal Template. Supplemental files may be submitted in addition to the proposal document.

For assistance, please contact the Solution Provider Help Desk (PhD@ninesigma.com).

## REQUEST GUIDELINES

### 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.

### 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

### Response Selection

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. NineSigma will contact respondents with highly responsive proposals for next steps, or the client may contact respondents directly.