



## Centre for Advanced Software Engineering Research

University of New South Wales,  
Sydney, Australia

### **Participants Needed for Research Trials into the Assessment of Software Measurement**

The Centre for Advanced Software Engineering Research (CAESER) at the University of New South Wales invites organisations to participate in research leading to improved methods for assessing the performance of software measurement in organisations. One assessment method, which targets the quality of information provided by measurement, has been developed and tested at a single organisation. A report on this trial was presented at the IEEE Metrics Symposium in London in April 2001. It is now necessary to conduct trials of the assessment method at other organisations. Participation is open to organisations in Australia, Canada, New Zealand, United Kingdom and U.S.A.

If you are interested in participating, please contact Mike Berry (the researcher) as soon as possible. We will then send you to further information and, if possible, arrange for a face-to-face presentation on the assessment method and the trials.

### ***Benefits for Participating Organisations***

The research aims to support improved software measurement by 1) identifying opportunities to improve the quality of the information supplied to managers, process engineers and software engineers and by 2) identifying factors that affect the success of a software measurement program. Organisations will obtain a benefit from participation in this research when they are able to manage their projects better and/or improve their processes as a result of improved measurement.

As a result of participating in a trial, the organisation:

- Will be able to improve the efficiency and effectiveness of their measurement program, and
- Will be able to identify the best opportunities to improve the quality of information provided to those people working in particular projects or process areas.
- Will be able to demonstrate compliance with the evaluation requirements of international standard ISO/IEC 15939 – Software Measurement Process and/or conformance with the model for the "Measurement and Analysis" process area as defined in the CMMI by the Software Engineering Institute.

Translating the knowledge gained from participation in the research trial into action and achieving beneficial outcomes will depend on organisational factors such as motivation, resources, priorities, and improvement infrastructure. The assessment method will make these factors apparent and will enable the organisation to tailor their improvement plan to what is feasible.



Professor Ross Jeffery,  
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### **Contacts**

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## **Information about the Trials of the Assessment Method**

### **Background**

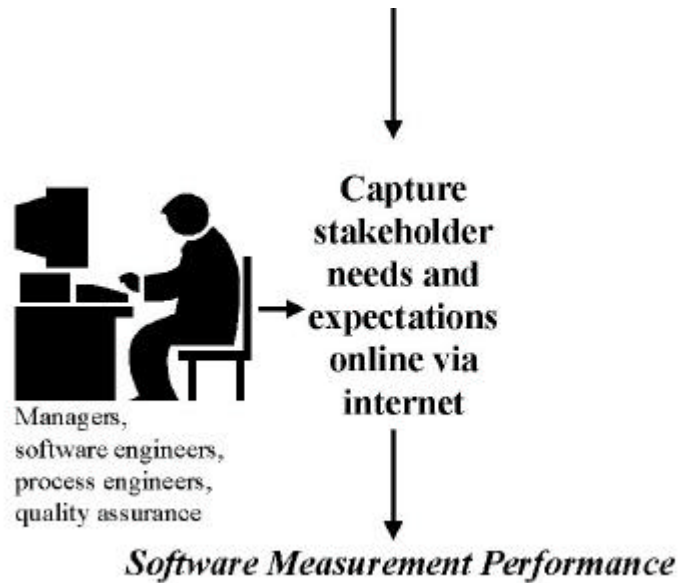
The University of New South Wales has been a centre of excellence in software measurement for more than ten years. This particular research project is being undertaken by Michael Berry, a PhD student in the School of Computer Science and Engineering at the University of New South Wales. Michael is being supervised by Professor Ross Jeffery and Dr. Aybuke Aurum. While currently a student, Michael has over thirty years experience in software engineering as a practitioner, academic and researcher. He is a member of the working group developing the new international standard ISO/IEC 15939 – Software Measurement Process.

### **Outline of the Assessment Process**



↓  
**Capture measurement issues  
from staff during a focus group  
meeting for use in the survey**

↓  
*Survey Instrument*



### **To Get More Information**

The targeted assessment process has already been piloted with one Australian software organisation.

Click here to see [a recent presentation at ACOSM 2001](#) on the pilot of the Targeted Assessment method.

Click here to [contact Mike Berry](#) for more information about the Measurement of Software Measurement and to receive the paper on Targeted Assessment that was presented at the 7th IEEE Software Metrics Symposium.

### **Commitments required from a Participating Organisation**

The assessment process involves the organisation committing up to 200 hours of resource time that is spent on survey coordination, focus group attendance, instrument review, pilot testing, survey response and results feedback. While the identities of participating organisations will remain confidential, organisations should note that the outcome of the trials will be published in the public domain.

## ***Responsibilities of Participating Organisations***

1. **Appoint a survey coordinator.** This person works with the researcher, sets up the focus groups, ensures the necessary technology is available, stimulates people to respond to the survey and helps develop the improvement plan.
2. **Select the software life-cycle process(es) to be targeted in the assessment.** The choice depends on the participant's particular issues and goals. The only requirement is that the process(es) is/are well-understood and adequately defined.
3. **Nominate people to participate in a focus group.** A focus group should have about four members plus the survey coordinator and will be facilitated by the researcher. More than one focus group may be convened if the organisation is willing. The job of the focus group is to identify issues concerning software measurement with respect to the targeted software life-cycle process(es).
4. **Nominate people to review the draft survey instrument.** Four to eight people from the organisation review the draft survey instrument in a pilot test. Based on their comments the researcher makes corrections.
5. **Request or nominate people to respond to the survey.** The survey coordinator ensures that a structured sample of the stakeholders in the targeted process(es) respond to the web-based survey. For example, if a project management process area is targeted, responses from program managers, project managers, project leaders and software engineers would be wanted. The target time for completion of the survey will be one hour. The survey may be completed over multiple sessions in order to assist respondents to fit it into their work schedules.
6. **Respond to survey of overall measurement program.** A limited number of people in the organisation (3-5) complete an additional web-based survey instrument that characterises the overall measurement program. This identifies constraints upon the program and risks for any improvement activities.
7. **Develop and implement an improvement plan.** With assistance from the researcher, members of the organisation generate an improvement plan that will contain a limited number of action items (say, 3-5). These improvements should be implemented within about six months.
8. **Review progress on improvements.** Once the improvements are bedded in (6-9 months), the survey instrument is re-deployed. Non-issues may have been dropped from the instrument and some new issues may be added. The current improvement opportunities are identified and interpreted with respect to the improvement plan.
9. **Provide feedback on the assessment.** It is important that the researcher receives feedback from participating organisations about their experiences, and, in particular, on the usability of the assessment process and instruments and the value of the outcomes from the assessment.

## ***Responsibilities of the Researcher***

1. **Facilitate focus group(s) and analyse the measurement issues.** The researcher will map the issues concerning software measurement onto a normative model of measurement performance in order to identify duplicates and omissions. This will produce a set of assertions that provide the basis for the survey instrument.

2. **Create a web-based instrument to collect data about the issues.** A few members of the organisation will review the instrument via the Internet. The researcher analyses the results from the pilot test and reduces the number of probes in the instrument based on the information value and response time for each probe. The instrument would normally be available over the Internet from a University of New South Wales web-site; however, the participating organisation's Intranet may be used if necessary.
3. **Identify improvement opportunities.** The researcher analyses the responses from the survey instrument (both quantitative and qualitative) and produces a ranked list of opportunities to improve measurement with respect to the targeted process(es).
4. **Assess the overall software measurement program.** Analyse the data from a web-based survey of the participating organisation's software measurement program. Identify the factors impacting on software measurement and the risks for successful improvement.
5. **Assist participant's team to develop improvement plan.** Provide analyses and personal expertise in software measurement to the organisation to help them to develop a feasible improvement plan.
6. **Analyse the assessment process.** The researcher evaluates feedback from the participating organisations and observations made during the assessments. The evaluation is used to improve the assessment process for another round of trials directed at enabling organisations to use the assessment process without external assistance.
7. **Publish the research.** The results of this research will be published in the public domain through journals and conference papers servicing both researchers and practitioners.
8. **Protect the Privacy of the Organisation and Survey Respondents.** No participating organisation will be identified without its written permission. Data collected as part of the research trials will not be used for any other purposes than for the evaluation of the assessment method without written permission. Care will be taken to prevent the identity of survey respondents being apparent in analyses of survey data provided to participating organisations.
9. **Assist organisations to obtain a benefit from their participation.** Participants have the rights to 1) re-use the survey instrument developed for the trial in their organisation and to 2) adopt or adapt the assessment method in order to conduct further assessments within the organisation. The researcher will assist the organisations to advantage of this right.