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SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Title - Sujet Single-Sided NMR	
Solicitation No. - N° de l'invitation 31030-141991/A	**Amendment No. - N° modif.** 004
Client Reference No. - N° de référence du client 31030-141991	**Date** 2014-07-24
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File No. - N° de dossier pv941.31030-141991	**CCC No./N° CCC - FMS No./N° VME**
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2014-08-05	**Time Zone** **Fuseau horaire** Eastern Daylight Saving Time EDT
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REQUIREMENT: SINGLE-SIDED NUCLEAR MAGNETIC RESONANCE SPECTROMETER

Amendment 004 has been created to answer the following questions:

Q1. Annex A - Item 1e. Spectrometer must allow for the operation of magnets with different field strengths, e.g. between 5-10 Tesla/metre.

The requirements ask for the operation of the spectrometer of magnets with different field strength. However, the example given (e.g. 5-10 Tesla/metre) is not a field strength but a gradient strength. Can you please elaborate?.

A1. The requirement should indeed be for a magnet with different field gradient and not field strength. The text should therefore be amended to the following:

ENGLISH: "....operation of magnets with different field gradient...."
FRENCH: "....l'utilisation d'aimants de gradient différents....

Q2. Annex A – Item 2c. Transmission and reception radio-frequency (RF) coils are separate

All standard single-sided NMR sensors use a single coil for transmission and reception of the radio frequency. A separation into a coil for transmission and separation would be possible. However, this is very unconventional and will result in a decrease of the performance of the sensor. Can you please elaborate what is the aim of using separate transmission and radio-frequency coils in terms of magnetic shielding and vibration control and if there are specific requirements that could not be fulfilled, when using a single coil instead?

A2. Separate coils enhance the signal-to-noise ratio, e.g. Q-switching. While this is beyond the standard passive shielding of coils, the requirement can optionally be amended to:

In English,:
Transmission and reception radio-frequency (RF) coils are preferably separate

In French,
Bobines de transmission et de réception des radiofréquences (RF) préférablement distinctes

Q3. Annex A – Item 2d. RF coils are protected for acoustic ringing in the kHz to MHz range.

Conventional coils for single-sided NMR are free of acoustic ringing when used inside specified parameters. Is there a specific kind of protection that is required? Which additional sources of acousting ringing do you expect from which the rf coil has to be protected.

A3. Reproducible signal detection from microlayers during the signal acquisition require a set-up that reduces or compensates for vibrations. While vibrations from the mechanical set-up of the detector are generally of a few Hertz, the RF coil can show self -induced vibrations in the kHz to MHz because of acoustic ringing.

In English, our requirement could be amended as follows:
RF coils are protected for mechanical vibration of the set-up (Hz-range) and acoustic ringing (kHz to MHz). If no protection is required, demonstrate why it is not required.

In French, the requirements could me modified to :
Bobines de RF protégées contre les vibrations du montage mécaniques du système de détection (plage des Hz) et contre la résonance acoustique (plage des kHz à MHz). Si la protection n'est pas nécessaire, démontrez pourquoi elle n'est pas nécessaire.

Q4. Annex A – Item 4a.Position of magnetic probe away from the sample plane can be adjusted in a step wise manner to do depth profiling between 10 micrometres and 5 millimetres; Item 4b. Resolution in depth profiling to 5 millimetre must be at least 10 micrometres; Item 4c. Position of magnetic probe away from the sample plane can be adjusted in a step wise manner to do depth profiling between 100 micrometres and 25 millimetres; and 4d. Resolution in depth profiling to 25 millimetre must be at least 100 micrometres.

Can you please elaborate if it is permitted to include two different sensors to be able to fulfill the requirements given in 4a, 4b, 4c, 4d.

A4. As long as resolution is maintained as required, different sensors may be used for depth profiling. A sensor may be used for profiling through a 5 mm depth, and another sensor may be used to profile through 25 mm of depth.

Pour autant que la résolution soit maintenue, des détecteurs différents peuvent être utilisés. Par example, un premier détecteur peut être utilisé pour une analyse sur 5 mm de profondeur et un deuxième détecteur peut être utilisé pour une analyse sur 25 mm de profondeur.

Q5 Annex A Item 5d. iv. Acquisition of nuclear relaxation from fluorine.

Can you please elaborate, if only the software should have the possibility to detect fluorine (19F) signal or if it is desired to acquire 19F signal with the single sided sensor?

A5. The single-sided detector must allow for the acquisition of signal from fluorine. The software must allow for the analysis of the acquired signal. It is understood that the signal may overlap with those from protons.

ALL OTHER TERMS AND CONDITIONS IN THE RFP REMAIN UNCHANGED.