Voluntary ex ante transparency notice
This notice is a "Voluntary ex ante transparency notice".

The contract can be awarded to Bruker through a negotiated procedure without prior publication because

there is no competition for technical reasons (Article 2.32, paragraph 1, subparagraph b, point 2, Aw 2012) and there is no reasonable alternative or substitute and the lack of competition is not the result of an artificial restriction of the terms of the tender (Article 2.32, paragraph 3, Aw 2012).

Motivation
The uNMR-NL consortium, coordinated by Utrecht University, (Utrecht, The Netherlands; https://unmr-nl.science.uu.nl) is planning a major upgrade of the NMR infrastructure in the Netherlands by the acquisition of a dedicated package of NMR instrumentation to expand and secure measurement capabilities across its 4 major nodes.

The uNMR-NL consortium operates as a single, distributed, facility requiring transferability between sites and machines. We have previously setup a unified environment of analytical methods and procedures for instrument operation, data storage and handling. The upgrade therefore must maintain and support the unified grid nature of the infrastructure.

Acquiring, from a single supplier, a unified environment for operation of all instrumentation and analysis of all data, by using identical and compatible software and methods is key for training of new personnel, enabling access for new external users, pre-screening of samples and multi-instrument analytical workflows:

- Training of new personnel and external users of the facilities in instrument operation and data analysis will be done primarily on lower-end instrumentation, before they are allowed to access the high-end ultra-high field instruments, which are expected to work in a largely identical manner.
- Samples and associated analytical methods (including but not limited to pulse-sequences) will first be analyzed using local, lower field, instrumentation, and if additional data is required, the samples will be transferred to high-end equipment where the identical methods will be used for their analyses, albeit at a (much) higher field strength.
- With different instruments in the uNMR-NL grid having different analytical capabilities (e.g. high-resolution NMR and μ-imaging), one important goal of the project is to enable analyses of the same samples with different methodologies, and combining the acquired data from the different instruments to obtain and integrated analytical view of the samples through a multi-instrument analytical workflow

The package, detailed below, will replace or add part(s) of a complete NMR system to upgrade the existing NMR infrastructure. Because of the required comprehensive interconnectivity of the components, and the need for full compatibility of the upgrade with existing hardware, this package is a single purchase with requirements as set out below.

600 MHz NMR magnet (Utrecht University)
This magnet will replace an existing Oxford magnet from 1991. The Ascend Evo 600 MHz magnet has a combination of necessary features for our research that makes this system the only system eligible for the desired research. These features are:

- full compatibility with existing Bruker Avance III console, Bruker SampleJet automated sample changer and Bruker Prodigy cryo-probe.
- very high-quality shielding from electromagnetic interference (EMI) with > 95% over entire frequency range; > 98% for below 10 mHz and > 99.5% > 16 Hz; which is crucial to ensure reliable operation during upcoming local renovations
- a helium hold time of 1 yr and evaporation rate ≤ 13 mL liquid He per hour to reduce environmental footprint and reduce operational costs
- small footprint and radial stray field < 0.7m to ensure efficient siting
- advanced vibration dampers in horizontal and vertical dimension that increase vibration tolerance to VC-E/Nano-C level, which is crucial to ensure reliable operation during upcoming local renovations
- high magnetic stability (drift rate < 6 Hz/hr) and high axial range with homogeneity better than 10 ppm over 55 mm

600 MHz NMR console (Leiden University)
This console will replace an existing, faltering Bruker Avance III console from 2010. The NEO-X console has a combination of necessary features for our research that makes this system the only system eligible for the desired research. These features are:

- full compatibility with existing Bruker TCI $^{1}H/^{19}F$ cryoprobe and first-generation Bruker TCI cryoprobe, Bruker SampleJet automated sample changer and Oxford magnet with BOSS3 shim system.
- support for automatic operation of two existing commercial triple-channel 5 mm solution probeheads
- multi-receive capabilities to allow multiplexing of NMR measurement (NOAH, UTOPIA), reducing measurement times.
- data acquisition with spectral width up to 7.5 MHz, effective dynamic range (> 17-bit at up to 5 MHz spectrum width, > 19-bit at up to 1 MHz spectrum width, > 23-bit at up to 6 kHz spectrum width)
- timing resolution ≤ 12.5 ns (simultaneous RF amplitude, phase & frequency setting); waveform memory ≥ 1 GB

Probe upgrades (Wageningen University & Research)
The upgrade adds and extends multinuclear capabilities to the existing Bruker SB700, WB 600 and WB300 systems.

The ^{1}H-^{19}F/X BBI probe has a combination of necessary features for our research that makes this system the only system eligible for the desired research. These features are:

- full compatibility with existing Bruker Avance III HD console and Bruker Avance SB700 magnet
- one channel tunable to $^{1}H/^{19}F$ and one broadband channel
- support for automated tuning and matching
- VT range at least from −30°C to +150°C

The X/F-H double resonance top-loading 3.2mm CP/MAS probe has a combination of necessary features for our research that makes this system unique. These features are:

- full compatibility with existing Bruker Avance III HD console and Bruker Avance III HD SB700 magnet and other MAS systems in the consortium with respect to exchanging rotors and samples.
- two channels for ^{1}H and BB detection (including ^{2}H and ^{31}P)
- sample active volume of 30 µL, suitable for 3.2 mm rotors
- MAS frequency ≤ 24 kHz
- VT range at least from −80°C to +150°C

The CP2.1 cryo-imaging probe has a combination of necessary features for our research that makes this system unique. These features are:

- full compatibility with existing Bruker Avance NEO console, Bruker Avance WB600 magnet and Bruker Mic-2.5 tri-axial gradient system
- multinuclear imaging at highest sensitivity via a two-channel multi-nucleus 10 mm observe configuration, i.e. 5 nuclei (selectable in the range of ^{31}P to ^{29}Si and ^{15}N given by the cold BB preamp) and ^{1}H channel.
- support for automated matching and tuning.

Microimaging volume coils for $^{23}Na/^{1}H$, $^{31}P/^{1}H$, and $^{2}H/^{1}H$ have a combination of necessary features for our research that makes this system unique. These features are:

- full compatibility with existing MicWB40 or Mic-5 probes.
- 8 to 20mm diameter

The Micro5-Diff50 probe base has a combination of necessary features for our research that makes this system unique. These features are:

- full compatibility with existing Bruker Avance NEO console, Bruker Avance WB600 magnet and Bruker Mic-2.5 tri-axial gradient system
- 2 independent rf-channels, which can accommodate exchangeable rf-inserts.

The Micro 2.5 actively shielded WB gradient system has a combination of necessary features for our research that makes this system unique. These features are:

- full compatibility with Bruker NEO 300WB magnet and existing MicWB40 rf probe
- gradient strengths up to 150 G/cm (1500 mT/m) at 60 A.
- inner diameter of the gradient coil of 40 mm

The Micro5 gradient coil has a combination of necessary features for our research that makes this system unique. These features are:

- full compatibility Bruker NEO 300WB magnet and existing Micro5 and Diff50 Bruker probe bases and related inserts.
- support for XYZ gradient with 5 G/cm/A leading to 300 G/cm (3000 mT/m) at 60 A.
- compatibility with Diff50 diffusion probe for use as imaging probe

The BCU-II unit has a combination of necessary features for our research that makes this system unique. These features are

- full compatibility with Bruker Avance NEO consoles, providing variable temperature (VT) gas cooling of NMR probes as low as about ~ −40 °C. VT gas temperature about −80 °C (at the end of the transferline), up to 3600 litre per hour

Probe upgrades (Radboud University Nijmegen)

The upgrade adds extended multinuclear capabilities to the existing Bruker Avance 950 MHz system.

The 3mm BBO iProbe probe has a combination of necessary features for our research that makes this system the only system eligible for the desired research. These features are:

- full compatibility with existing Bruker Avance III HD console, Cryo Cooling Unit, and Bruker Avance 950 MHz magnet
- BB observe channel ^{103}Rh to ^{31}P
- ^{1}H channel tunable to ^{19}F
- automated tuning and matching
- VT capabilities: −150 to +150 °C including temperature-controlled transfer lines
- additional accessory system for flow NMR, including pumps, including temperature-controlled transfer lines

The double resonance solid-state MAS cryoprobe has a combination of necessary features for our research that makes this system the only system eligible for the desired research. These features are:

- full compatibility with existing Bruker Avance III HD console, Cryo Cooling Unit, and Bruker Avance 950 MHz magnet and other MAS systems in the consortium.
- 2 channels (H/X)
- Cryogenic cooling of probe electronics including the preamplifier
- Sensitivity gain ≥ 3 compared to conventional probe with identical rotor diameter
- Broadest possible tuning range on X channel (preferably ^{31}P to ^{39}K) but must cover at least low-gamma nuclei low-gamma nuclei in the range of ^{39}K to ^{33}S, and if feasible to add the range from ^{17}O to ^{6}Li)
- motorized and automated magic angle setting
- motorized probe lift system
- MAS frequency ≥ 20 kHz
- Maximum filling volume ≥ 90 µL
- VT capabilities at least: –20 to +60 °C

Computer and license upgrades (uNMR-NL wide)

The upgrades replaces outdated workstations to control the NMR spectrometers. The generation Linux-based workstations have a combination of necessary features for our research that makes this system the only system eligible for the desired research. These features are:

- fully compatible with existing Bruker Topspin software and Bruker consoles including dedicated communication link.
- able to run the newly purchased Paravision licences for microimaging applications.

If you have any questions or objections regarding this notice, please contact Geurt Visser at g.visser@uu.nl to obtain further clarification or to give us the opportunity to assess any objections you may have.

If, despite our explanation/ response to your questions or objections, you cannot agree with this intention, you can initiate summary proceedings with the Midden-Nederland District Court in Utrecht. You must do so within 20 calendar days of publication of this notice. The contracting authorities shall not proceed to conclude the contract during the 20 calendar days following publication.