Institut "Jožef Stefan", Ljubljana, Slovenija

1001 Ljubljana, p.p. 3000 / Jamova cesta 39 / Tel. n.c. 477 39 00, Fax: 423 54 00

BID (PROFORMA INVOICE)

Details about the Bidder:

Name:	NMR SERVICE GMBH
Address:	Blumenstr. 70 Haus 3, 99092 Erfurt, Germany
VAT identification number:	DE259462822
Bank account and the name of the bank:	DE 34 8204 0000 0 11 67808 00 (Commerzbank Erfurt)
Contact person:	Dr. Oliver Pecher
Contact person's E-mail address:	o.pecher@nmr-service.de
Person responsible for signing the contract:	Dr. Oliver Pecher (Prokurist/COO)

JOŽEF STEFAN INSTITUTE
Jamova cesta 39
1000 Ljubljana

BID No. 2205044

Place: Erfurt, Germany

Date: 04 May 2022

On the basis of your public tender we are pleased to submit the following bid:

Type of purchasing: ☐ Service ☐ Material ☒ Equipment ☐ Construction

No.	Description of the goods	Quantity	Price	Discount %	Value
1	NMR/NQR CONSOLE FOR THE SUPERCONDUCTING MAGNET 9 T	1 Set	€95,594.00	20	€76,475.00
				TOTAL	**€95,594.00**
				DISCOUNT	**€19,119.00**
				VALUE without VAT (EUR)	**€76,475.00**

Delivery time (in weeks):	(30.09.2022 at the latest) 16 weeks, see deatils in attached quote no. 2205044
Payment terms:	30 days net
Delivery terms:	DAP Ljubljana (price includes delivery to the client's address)
Warranty period (at least 1 year):	12 months after installation/acceptance, details in quote no. 2205044
Validity of the bid:	31.10.2022

MANDATORY ENCLOSURE:
Brochures including a complete technical description and specification of the equipment, and the supplier's Offer/Quotation with technical specifications and a list of components included (please, enclose it to the second part of the tender documentation)

The Bidder:

Dr. Oliver Pecher, Prokurist/COO

NMR SERVICE

MADE BY NMR SERVICE - MADE FOR YOU.

Phone +49-361-551-282-00
Fax   +49-361-551-282-07
Email info@nmr-service.de
Web   www.nmr-service.de

Jožef Stefan Institute
Jamova cesta 39
1000 Ljubljana
Slovenia

Erfurt, 04 May 2022

Quotation No. 2205044	Delivery: 16 weeks

Your public tender: JN13/22

Pos.	Qty.	Description	Unit Price	Price

1	SET	**NMR/NQR CONSOLE FOR THE SUPERCONDUCTING MAGNET 9 T**
		
		• **Redstone HF1 – single-resonance NMR/NQR console**
		 ○ RF transmitter
		  ▪ One channel for 1 MHz to 600 MHz
		  ▪ 10 ns 0.0055° phase shifts and 40 ns 96 dB amplitude control
		  ▪ 64 million point waveform memory
		  ▪ 20 ns phase-continuous frequency switching over 20 MHz
		  ▪ High stability oven oscillator with 5×10-10/day stability
		 ○ Digital Receiver
		  ▪ Independent Digital Receiver with 14-bit 50 MHz ADC digitizing directly at the intermediate frequency, oversampling
		  ▪ Digital filtering, and receiver bandwidth of 3.3 MHz
		  ▪ Fast acquisition recycle time of 50 µs plus one dwell period
		  ▪ Receiver recovery time < 2 µs
		  ▪ 66 dB of variable gain with up to 85 dB of total gain (exclusive preamplifier)
		 ○ Signal Averager
		  ▪ 1 GB of memory (512×256×256×4)
		  ▪ 10 ns resolution DSP pulse programmer
		  ▪ 10 ns minimum pulse width, unlimited number of loop counters
		  ▪ 3072 sequence events
		  ▪ External trigger and 7 user assignable control lines
		 ○ Computer and Software
		  ▪ Quad core i7 PC with Microsoft Windows 10 Professional
		  ▪ 16 GB RAM, 256 GB SSD, 1 TB hard drive, Ethernet
		  ▪ 24" TFT monitor, keyboard, and mouse
		 ○ TNMR™ software site license (free updates)
		 ○ Allows future expansion to up to 4 transmitters and/or 8 receivers
		 ○ Shim control unit: console is suitable for any shim power supply
		
		• **On-site installation and user training (1 day)**
		
		• **Shipping/handling (DAP Ljubljana, SL)**
			€95,594.00	€95,594.00

		Sub Total		€95,594.00
		Discount		-€19,119.00
		NET TOTAL		**€76,475.00**

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Web	www.nmr-service.de

Price/VAT:	All prices are, if not explicitly addressed otherwise, net prices. This quote considers a tax-free intra-community delivery within the European Economic Area (EEA). Our VAT No.: DE 259462822. All out of state sales/use tax, VAT, import duties, and related costs are the responsibility of the customer.
Currency:	All prices in Euro (EUR, €).
Validity:	This quotation is valid for 3 months.
Shipping:	Prepaid and added. Incoterms® 2020: DAP (Delivered At Place) Ljubljana, Slovenia. Note, import formalities and duties as well as buyer location unloading remain responsibility of the customer.
Warranty:	We provide 12 months warranty on goods and labour after installation/acceptance.
Liability:	Our liability is limited to the value of the delivered goods.
Order:	Signed and confirmed order form via email.
Delivery:	16 weeks after receipt of order (ARO). Note: the world has a shortage of FPGAs and now even power supplies are getting difficult to purchase, which might affect the delivery time of the final product. NMR SERVICE, however, will be able to provide the equipment until 30 September 2022 and finalise the paperwork. If there is a delay with the supply of some internal parts (i.e. the ultimate performance of the product might not be available on delivery), NMR SERVICE will extend the 12 month warranty starting with the date that the final product with final specifications has been delivered and installed.
Payment:	NET 30. All goods remain property of NMR SERVICE until paid in full.

Warranty: The equipment to be provided comes with a 12-month warranty (after installation/acceptance) for the material and manufacturing to be without failure. The liability of NMR Service GmbH under this warranty is limited to replace and/or repair the equipment, components and/or parts as long as these have not been misused, neglected, improperly repaired, changed and/or involved in an accident. NMR Service GmbH holds the right for the final error determination regarding the presence and/or reason for malfunctions/defects of the equipment. NMR Service GmbH is not and under no circumstances liable for collateral and/or consequential damage of the equipment. This warranty is valid in place of any other warranty expressed (implied or statutory) and no agreement extending or modifying this warranty is binding on NMR Service GmbH unless in writing and signed off by NMR Service GmbH. Equipment returned for repair shall be shipped prepaid to the facilities of NMR Service GmbH (Blumenstr. 70 Haus 3, 99092 Erfurt, Germany). NMR Service GmbH will repair and ship back the equipment as soon as possible.

COVID-19 Clause: Buyer and vendor are aware that the COVID-19 virus has been declared a pandemic by the world health organisation (WHO) and both acknowledge that due to the resulting circumstances the fulfilment of the contract by NMR Service GmbH can – directly and/or indirectly – be delayed and/or impaired and/or increased costs might occur (without restrictions including circumstances due to a lack of personal or non-availability or restricted availability and/or access to materials, goods, funds, credits or services, which affect the vendor or his sub-contractors). Given that the vendor: (i) informs the buyer immediately about the circumstances and keeps the buyer posted after that on a regular basis about the developments, (ii) has put appropriate measures, care, and actions in place and keeps updating the measures to prevent further impairments on the fulfilment of the contract, the buyer commits to give the vendor more time to fulfil the contract and to refund extra-ordinary shipping costs, which are demanded and verified by the vendor in a reasonable matter.

Thank you very much for your inquiry. Please do not hesitate to contact me if you have further questions.

Sincerely yours,

Dr. Oliver Pecher
– PROKURIST / CHIEF OPERATING OFFICER (COO) –

Transmitter

- Up to 128 transmitters
- Frequency range configurable to cover 2 kHz to 3.5 GHz
- Phase shifting ≤ 10 ns with 16-bit (0.0055°) phase resolution
- RF spoiling on MRI consoles with phase resolution of 16-bit (0.0055°)
- Phase continuous frequency switching ≤ 20 ns over a 20 MHz range
- Absolute phase reset
- Pulse rise time ≤ 30 ns (10 to 90%)
- Amplitude control over 96-dB with ≤ 40 ns switching time
- 12-bit 32-dB linear RF modulator (effective resolution < 0.05 dB)
- 7-bit 64-dB (0.5-dB steps) digital attenuator
- 64 million point waveform memory (amplitude & phase) for each RF channel
- Waveform sample interval of 10 ns to 43 s
- Simultaneous amplitude, phase and frequency shape any RF pulse
- Frequency resolution of 0.19 Hz
- 5×10^{-10}/day frequency stability
- Nominal 1 V output
- Optional 5 W to 4 kW linear RF power amplifiers

Digital Receiver

- Up to 512 digital receivers

Single Receiver Operation:
- 14-bit 50 MHz ADC with oversampling providing an effective dynamic range of up to 24-bits
- Direct digitization at the intermediate frequency (12.5 MHz) with digital quadrature detection
- Digital filtering from 48 Hz to 12.5 MHz bandwidth
- Variable spectral widths within a sequence; up to 64 different spectral widths
- Fast <1 μs receiver recovery time
- RF receiver section with 66-dB of variable gain and > 85-dB of total gain (exclusive of preamplifier)
- RF receiver bandwidth of 5.0 MHz
- Burst Mode: up to 4096 complex points can be acquired at 200 ns per complex point (5.0 MHz spectral width)
- Normal Mode: data (any size) can be acquired from 21 ms per complex point (48 Hz) to 1 μs per complex point (1 MHz)
- Direct Digital Detection available over a frequency range of 2 kHz to 100 MHz with up to 12.5 MHz bandwidth (80 ns per complex point)

Multiple Receiver Operation:
- Independent LO's optionally available for detection of different nuclei during the same pulse sequence
- Multi-receiver, simultaneous, interleaved, acquisitions with a minimum dwell time of 1 μs per complex point times the number of active receivers
- Optional low noise figure, fast recovery preamplifiers
- Optional multi-channel RF probe interface / coil interface
- Optional external digital attenuator
- Optional 24-channel ADC board for low frequency detection (DC to 100 kHz)

Signal Averager

• 32-bit 256 Mbytes (512 x 256 x 256) memory; expandable to 1 Gbyte
• Up to 4 receivers connected to a single signal averager
• Maximum of 128 signal averagers
• Dedicated ultra-fast real-time display memory for adjusting instrument control settings
  and experiment monitoring
• Uploading of data with fast (480 Mbits/s) USB 2.0 interface
• Access data in the signal averager in 60 ms
• Optional direct connection of the digital receiver to the host PC for access to data in 5 ms

Pulse Programmer

• Minimum pulse width of 10 ns
• Timing resolution of 10 ns
• 3071 sequence events
• Minimum event of 100 ns
• 64 million point waveform memory for each RF (amplitude & phase) or gradient channel
• No hidden delays
• WYSIWYG graphical pulse sequence creation and editing
• Fast minimum acquisition recycle delay of 31 µs plus 1 dwell period (Normal Mode)
• External trigger and 4-bit conditional branching.
• User-assignable control lines 12 minimum
• High-speed (480 Mbits/s) USB 2.0 interface for loading the pulse programmer
• Optional additional user-assignable pulse programmer lines available in-groups of 24
• Optional latched control lines for pre-setting an experiment available in-groups of 24
• Optional Rotor Synchronization Module (RSM™) for active rotor synchronization. DSP counts
  rotor period to 100 ns and allows the rotor to be synchronized during any event in the sequence.

Gradient Control System Options

• Single or triple axis version
• Maximum of 128 x 3 gradient channels
• 64 million point waveform memory for each gradient
• Opto-coupled 20-bit high-speed DACs
• Digital pre-emphasis calculated on-the-fly
• 5 sets of pre-emphasis values (time constant, amplitude and offset) for each gradient
• Gradient rotation for oblique imaging with up to 80 angles
• Auto-shim Z, X & Y through the gradient coils
• Optional digital B_o compensation
• Optional linear or switched gradient amplifiers with 25 to 700 A

Arbitrary Waveform Generator
• Output range: ±1.1 V with 50 ohms impedance
• Resolution: 14-bit
• Sample rate: up to 100 MHz (10 ns per point)
• Waveform duration: up to 64M samples

Variable Temperature Option
• Microprocessor-controlled with efficient VT algorithm minimizes equilibration time
• Internal electronic temperature reference minimizes drift with room temperature
• VT controller range of -150 °C to +250 °C with 0.1 °C settability
• Heater protection circuit and air interlock protection
• Strip chart and text-based log file monitor modes
        Compatible with most probes, please contact Tecmag.

Room Temperature Shim Control Options

• SU-24 Shim Unit with up to 24 channels of ±1 Amp output, combined 5 Amp
  maximum output and 18-bit computer controlled DACs with software matrixing
        Compatible with most shim stacks.

• Auto-shim accessory providing 24 18-bit DACs for use with an existing RTS power supply
        Requires an analog input.

• Optional support for RRI matrix shims and power supply

MAS Spin-Speed Controller Option
• Settability of ± 0.1 Hz
• Control up to 100 kHz
• DSP-based controller
• Computer controlled ejection air if required
• Strip chart and text-based log file monitor modes
• Requires > 50 psig input air or nitrogen and 500 mv peak to peak tach signal
        Compatible with most probes.

Digital Lock with Liquid-State NMR Air Control Option
• Digital Lock System with broadband (5 MHz to 500 MHz) transmitter, digital lock
  receiver, digital filtering and lock blanking
• Digital air control and tachometer for liquid-state NMR
• Strip chart and text-based log file monitor modes
        Compatible with most probes and upperstacks, please contact Tecmag.

Computer Option
• External mini-tower Dell Optiplex GX790
• Windows 7/10 Professional 64-bit
• Intel Core I5 3.15 GHz processor
• 8 Gbyte of RAM, DDR3
• 500 Gbyte 7200 rpm SATA II hard disk
• 16xDVD+/-RW SATA drive
• 512MB AMD RADEON HD 6350 (2 DVI), dual monitor (DVI) PCI Express
video card• 10/100/1000 Base T Ethernet (RJ-45 port)
• AC'97 Audio
• Dell USB keyboard
• Dell USB Optical Mouse with scroll
• Fast FFT, 1k x 1k in < 1s; 256 x 256 x 8 in < 0.5s

> The computer and LCD monitor are sold separately and can be purchased from Tecmag or other vendors.

• TNMR software site license for instrument control and processing of spectroscopy and imaging data

• NMRscripts for automating any task. Includes a suite of NMRscripts

• Pulse sequence library of spectroscopy and imaging sequences

• Optional, clinical imaging software with graphical slice selection from scout images, patient database, and DICOM support for printing, storing and displaying images.

Environmental
• Cooling - Internal forced air with EMI air filter
• Operating temperature - +16°C to 27°C with a humidity range of 20% to 80%
• AC line voltage - 100 - 240 VAC, single phase, 47-63 Hz
• Each 19" rack mount chassis supports up to nine clusters (system cluster plus eight transmitter, receiver or gradient clusters)
> The power requirements (KVA), packaging size, and net weight depend upon the configuration. For more details, please contact Tecmag.