Service		
RACOS® elasticity	RE1a	RACOS® core analyses to determine the 3D magnitudes and orientations in relation to the core of the principal compressional and shear wave velocities (**seismic anisotropies**), Young's modulus and Poisson's ratio (**dynamic elastic parameters**) under atmospheric conditions and (to determine the in situ rock structure) under higher isotropic loading, on the basis of laboratory measurements in 18 directions
	RE1b	As RE1a but in strongly micro-fractured and/or clay-/silt-/marlstone rock using laboratory measurements made in 21 directions
	RE2	RACOS® core analyses to determine the 3D principal magnitudes and orientations in relation to the core and the average value of pore pressure effectiveness (**Biot coefficient**) on the basis of the analysis data from RE1a/RE1b (*for this it is necessary to have kept oriented plugs - in relation to the core - from the RE1a/RE1b core for additional laboratory investigations*)
	RE3	External **geographical reorientation** using "magnetic rock compass" (*for this it is necessary to have kept an oriented section from the RE1a/RE1b core for additional laboratory investigations*)
RACOS® stress	RL1a	RACOS® analyses to determine the 3D magnitudes and orientations in relation to the core of the **effective in situ stresses** on the basis of the analysis data from RE1a
	RL1b	RACOS® analyses as RL1a for strongly micro-fractured and/or clay-/silt-/marlstone rock on the basis of the analysis data from RE1b
	RL2	RACOS® analyses to determine the 3D magnitudes and orientations in relation to the core of the **total in situ stresses** including the frac closure pressure on the basis of the analysis data from RL1a/b & RE2
	RL3	RACOS® analyses to determine the 3D magnitudes and orientations in relation to the core of the **tectonic stress components** on the basis of the analysis data from RE1a/b & RL1a/b
	RL4	RACOS® analyses to determine the 3D magnitudes and orientations in relation to the core of the effective and total in situ stresses and pore pressure effectivenesses for a **pore pressure change** or a **paleo stress condition** (on the basis of the analysis data from RE1a/b, RL1a/b & RE2)
RACOS® strain	RD1	Determination of the **elastic and total 3D in situ rock and pore space deformations** and of the porosity, 3D deformation modules (static "Young's modules), Poisson's ratio and compressibility for the first change of pore pressure (on the basis of the analysis data from RE1a/b, RE2, RL1a/b, RL2 & RL4)

	RD2	Determination of the **porosity and permeability** under atmospheric conditions on 3 plugs taken in the principal directions of pore pressure effectiveness determined in RE2 and linking with the directional magnitudes of the pore pressure effectiveness, deformation etc.
	RD3	Determination of the **porosity and permeability** for 5 loading stages on 1 plug from a defined direction and linking with the directional magnitudes determined in RE2 for pore pressure effectiveness, deformation etc.
	RD4	Determination of the **porosity and permeability** for 5 loading stages on 3 plugs from the principal directions of pore pressure effectiveness determined in RE2 and linking with the directional magnitudes of pore pressure effectiveness, deformation etc.
RACOS® strength	RF1	Determination of the uniaxial compressive strength (**UCS-Test**) on plugs from the 3 principal directions of pore pressure effectiveness / rock deformation determined in RE2/RD1
	RF2	Determination of the uniaxial tensile strength (**Brazil-tests**) on plugs from the 3 principal directions of pore pressure effectiveness / rock deformation determined in RE2/RD1
	RF3	Determination of the principal axes of 3D strength with **UCS-Tests** on 7 plugs with different orientations and their combination into a 3D strength tensor
	RF4	Triaxial compression or extension tests (**SST**) with three different confining pressures to determine the peak and residual strengths and the relaxation behaviour, together with one uniaxial compression test and one uniaxial tensile test on 5 plugs from a defined direction, then combination of the results in a **Mohr-Coulomb envelope**
	RF5	Determination of the peak and residual strengths with specialized multi-stage compression - extension tests (**MST**), determination of the uniaxial tensile strength **(Brazil test)** and of the uniaxial compression strength **(UCS)** on a total of 4 plugs taken in a defined direction; combination of the results in a **Tauber failure criterion** (for 3D loadings) and definition of **Mohr-Coulomb failure criteria** for compression and for extension test data
	RF5a	Determination of the peak strength and measuring of the load dependent axial and radial plug deformation with a specialized multi-stage compression test (**MST**), determination of the uniaxial tensile strength **(Brazil test)** and of the uniaxial compression strength **(UCS)** on a total of 2-3 plugs taken in a defined direction; combination of the compression test data in **Mohr-Coulomb failure criterion** and calculation of the deformation modules (static “Young’s modules), Poisson’s ratio and compressibility in the plug axis for each confinement
	RF5b	Determination of the peak and residual strengths with a specialized multi-stage compression test (**MST**), determination of the uniaxial tensile strength **(Brazil test)** and of the uniaxial compression strength **(UCS)** on a total of 2-3 plugs taken in a defined direction; combination of the compression test data in **Mohr-Coulomb failure criterion**

	RF6	Determination of the peak and residual strengths with specialized multi-stage compression - extension tests (**MST**) on two plugs taken from each of the 3D principal strength directions determined in RF3, combination of the results in 3 direction dependent **Tauber failure criteria** (for 3D loadings) and in 6 **Mohr-Coulomb failure criteria** for the compression and the extension test data
	RF7	Transformation of the 3D principal strength information and criteria determined in RF6 into any selected (e.g. on the basis of RACOS® stress, ROMEIN and/or BOREHOLE) 3D stress system
BOREHOLE	SB1	Finite element analyses (elastic) to **evaluate stability and sanding etc. around boreholes**; the price of the analyses depends on the number of configurations and the boundary conditions (compact or disturbed rock, permeable / impermeable borehole wall etc.) in each case
ROMEIN	SR1	Linking a 3D in situ stress condition determined in RL1a/b & RL2 or RL4 with the strength data from RF4-RF7 and **optimization or determination of limit values for technical parameter** (pore pressure etc.) in undisturbed rock masses
	SR2	For a defined discontinuity, linking the 3D in situ stress condition determined in RL1a/b & RL2 or RL4 with the strength data for it from RF4-RF7 and **optimization or determination of limit values for technical parameter** (pore pressure, fissure inner pressure etc.) in disturbed rock masses
	SR3	Derivation of the changes in the initial 3D in situ stresses determined in RL1a/b & RL2 for an impermeable undisturbed overburden resulting from the pore pressure change related modifications in 3D in situ stresses determined in RL1a/b & RL2 or RL4 for an adjacent undisturbed storage layer, and linking these with the strength data determined for the overburden in RF4-RF7 and **optimization or determination of limit values for technical parameter** (pore pressure etc.) in the undisturbed storage layer
	SR4	Derivation of the changes in the initial 3D in situ stresses determined in RL1a/b & RL2 for a fault in an impermeable overburden resulting from the pore pressure change related modifications in 3D in situ stresses determined in RL1a/b & RL2 or RL4 for an adjacent undisturbed storage layer, and linking these with the strength data determined for the fault in RF4-RF7 and **optimization or determination of limit values for technical parameter** (pore pressure etc.) in the undisturbed storage layer