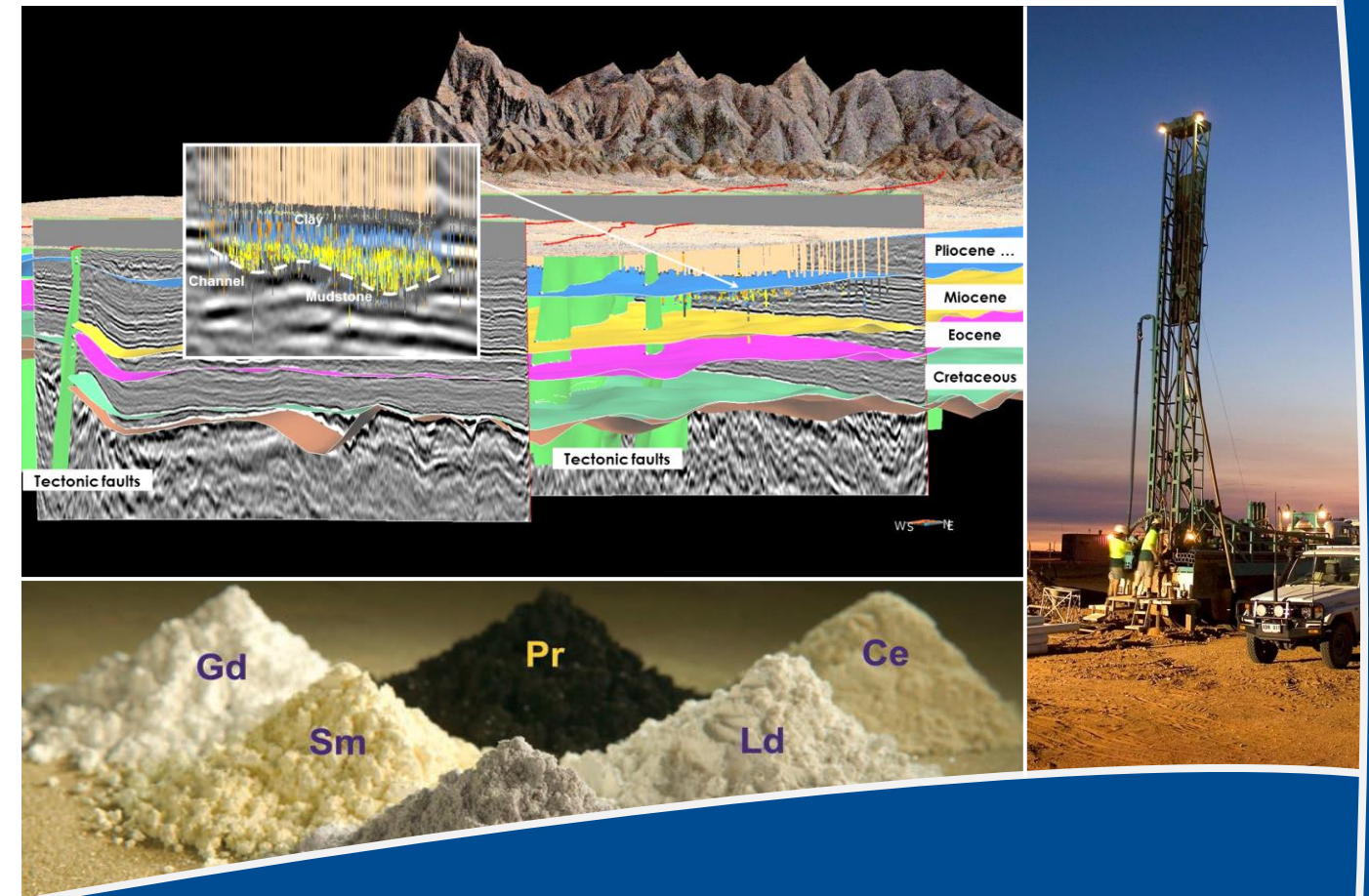


## Our Services

- Review of mapping, logging, sampling, sample preparation and assaying procedures
- Excellent capabilities in computer simulation including 3D deposit modeling, 3D hydrological and reactive-transport modeling, mineral processing simulation (focus on all types of leaching and metal refining)
- Evaluation of mining, dilution, ore loss, recovery and mineral processing aspects
- Mineral resource and ore reserve estimation, validation and classification
- Reporting in accordance with international codes such as JORC (2012), SAMREC and NI 43-101
- Feasibility studies for technology metals, e.g. REE and uranium prospects
- Production and service of innovative geophysical logging tools based on pulsed-neutron generator technology combined with neutron and gamma spectroscopy (APFN\*)
- Detailed metallurgical studies of complete REE and U processing chains including mechanical beneficiation, chemical digestion, metal separation and refining (performed in our technical center in Dresden, licensed for processing radioactive minerals like typical REE-bearing ores)
- Specific experience in in-situ leaching
- Mining/industrial water management and treatment technologies – full-scale engineering
- Environmental monitoring (design and implementation of web-server based networks on the basis of UIT's SENSolog/SENSOweb standard)



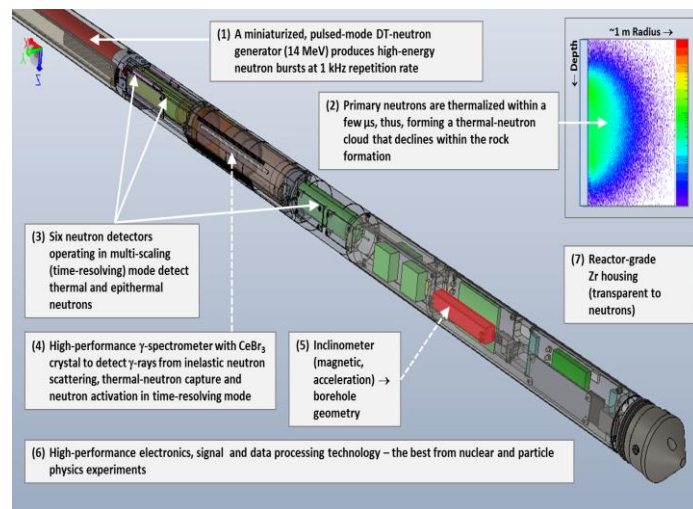
## Mineral Resources Services





# Advanced Geophysical Borehole Logging

APFN<sup>+</sup> - Advanced Prompt Fission Neutron tool for multi-functional geophysical logging: applicable to most technology metal deposits.



## APFN<sup>+</sup> - integrated functions:

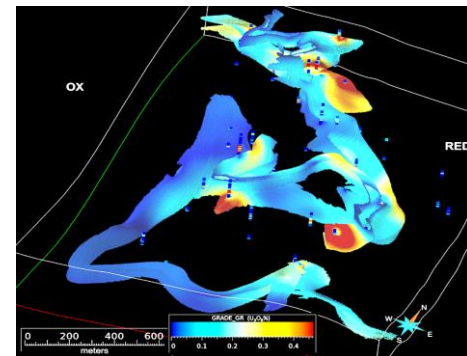
- Improve accuracy/precision of ore grade logging
- Integrate lithological logging (host rock lithology, geophysical/hydrological parameters)
- Integrate mineral logging (most reactive minerals)
- Measure borehole geometry (size, inclination)

## Improved database for ISR planning

All by ONE tool (economic effect)

Design parameters: 10 MPa pressure rating, maximum 80 °C, 3 m length, 3" diameter, 33 kg weight

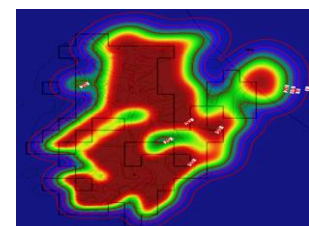
# Geological Modeling & Mineral Resource Estimation



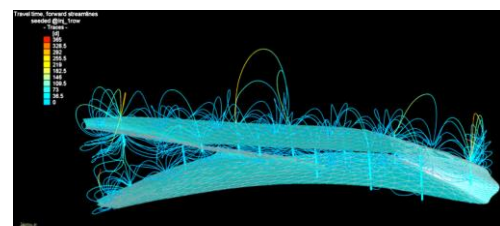
3D GOCAD model of geomorphology and ore grades of a uranium roll-front deposit

- Geological interpretation and 3D modeling (GOCAD/Micromine/WellCAD)
- Structural mapping and interpretation
- Geochemical and petrological modelling
- Interpretation and visualization of mineralization patterns and target generation
- Feasibility studies based on evaluation of geophysical/structural, geochemical, hydro-geological a. o. data
- Assessment of recovery potential (mineralogy/ore grade, geochemistry, reactivity, yield)

# 3D Hydrology and Reactive Transport Modeling



Mine water plume within aquifer

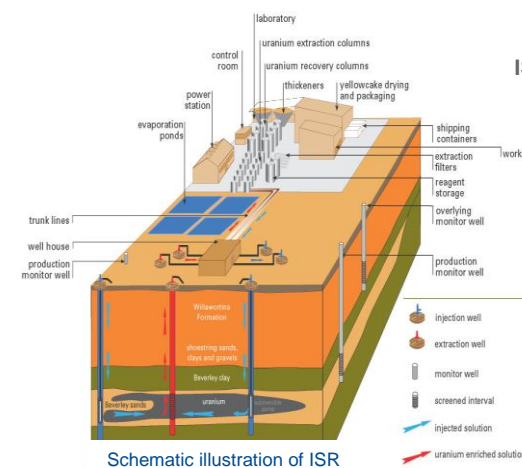
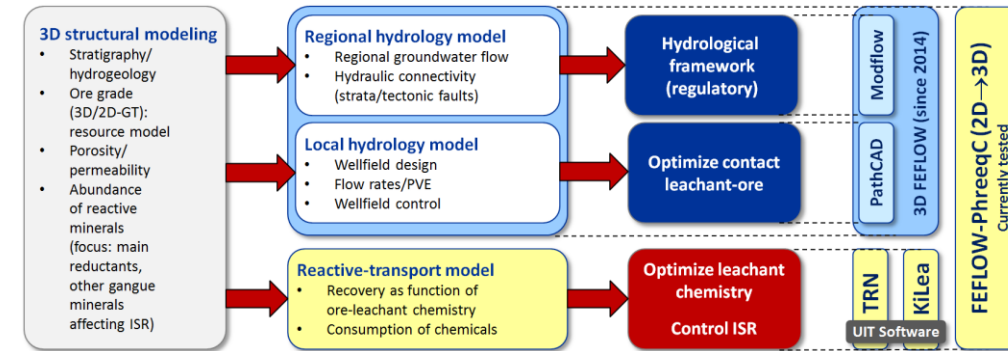


Lixiviant streamlines optimized to roll-front geomorphology

- Reactive transport modeling for ISR and in groundwater incl. post-mining remediation (natural attenuation, enhanced natural attenuation, in-situ remediation)
- Kinetics in hydrogeological systems including microbiology
- Chemical process simulation: Processing step sequences, Reactive transport in columns (e.g. IX)
- Mass balance of entire processing plants including chemicals' consumption and residues (yield, composition)
- Optimization of performance and automation algorithms
- Software: FEFLOW, PhreeqC and in-house software (aquaC, TRN and KiLea)

# ISR Mining and Hydrometallurgy of Technology Metals

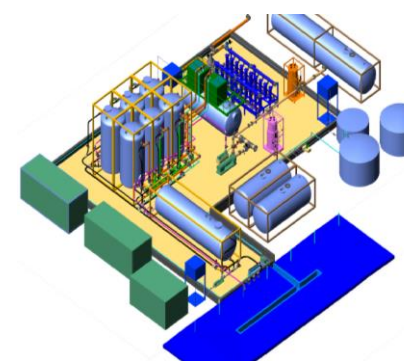
Model-based feasibility study and economic assessment, wellfield design and recovery planning for optimized leachant flowpath to maximize the extractable ore while appropriately reducing (if not eliminating) post-closure effluent flows and associated water management risks or treatment costs.



Schematic illustration of ISR

## ISR advantages:

- Low capital costs for mine development
- Environmentally friendly
- No waste rock, no tailings pond
- Profitable on lower grade uranium deposits
- Lower labor cost
- High recovery rates



ISR satellite plant desing (IX recovery)

## Hydrometallurgical recovery technology:

- Tank/heap/in-situ leaching
- Comminution, mechanical beneficiation, IX/RIP, SX and full-scale down-stream processing to intermediate/final product
- Process and waste water treatment technology (including recycle options)
- Separation and refining technologies
- NORM removal including expert know-how on the relevant technologies and the required licensing steps for processing of radioactive elements such as U and Th

# Mine Closure and Remediation



HDS plant (multi-stage neutralization)

- Active and passive water treatment
- Expertise in acid-mine drainage (AMD) applications: High-density sludge (HDS) and modifications, other highly efficient sulfate removal technologies, in-situ methods
- Sludge treatment and conditioning
- In-situ technology and remediation
- In-lake neutralization
- Mine and mill site remediation
- Process simulation capabilities (in-situ and plant processing)

We know that customer support is very important to our clients and therefore we are providing all services from on-site visits, sampling, process development, monitoring and maintenance.

In cooperation with our affiliate partners we can offer you consultancy including pilot testing, basic/detailed engineering/approval procedure/EPCM as well as turn-key plants with pilot facilities.

Contact us, we will listen to your needs and work out a solution to fit your technical requirements, your budget and your timeline.