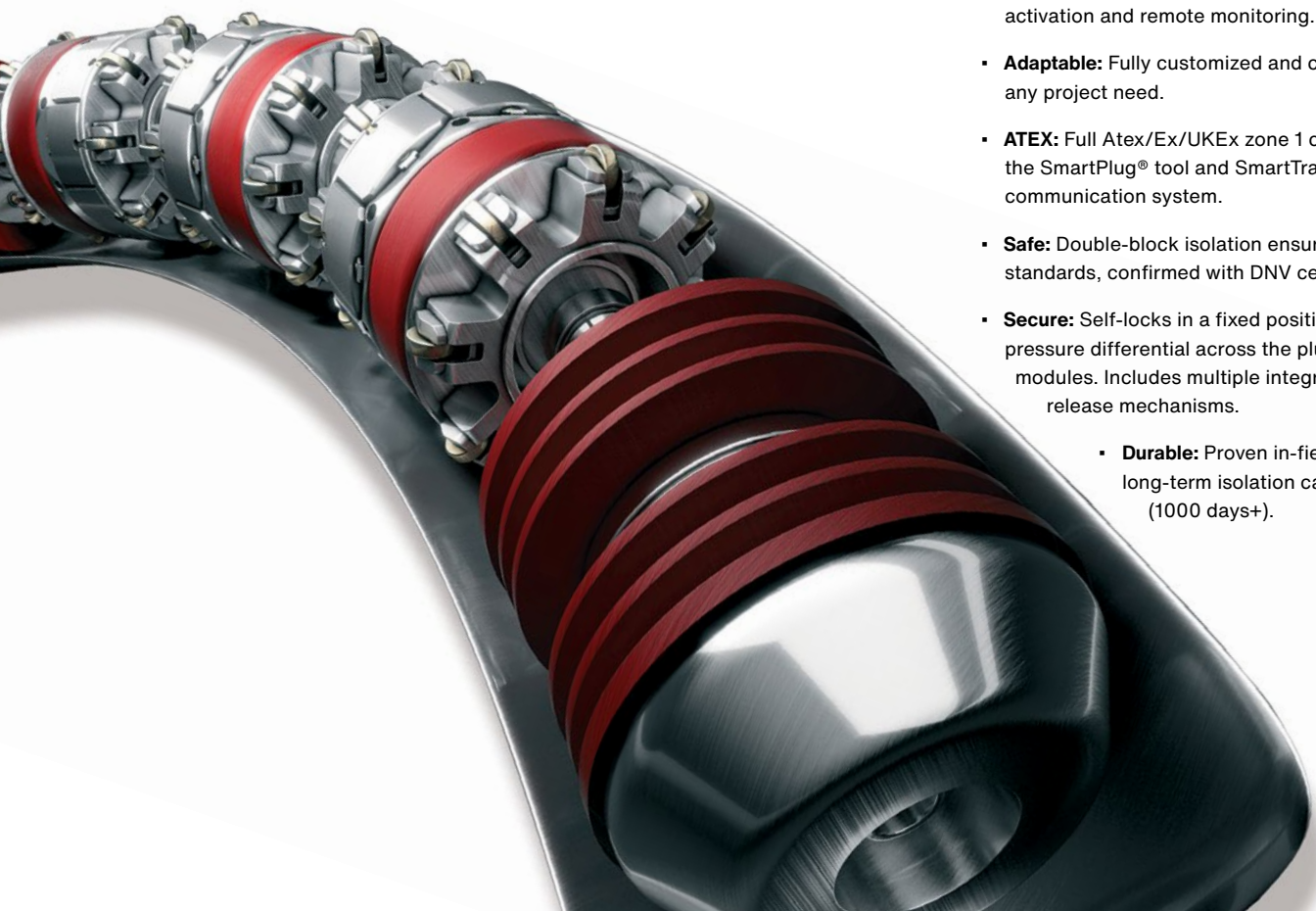
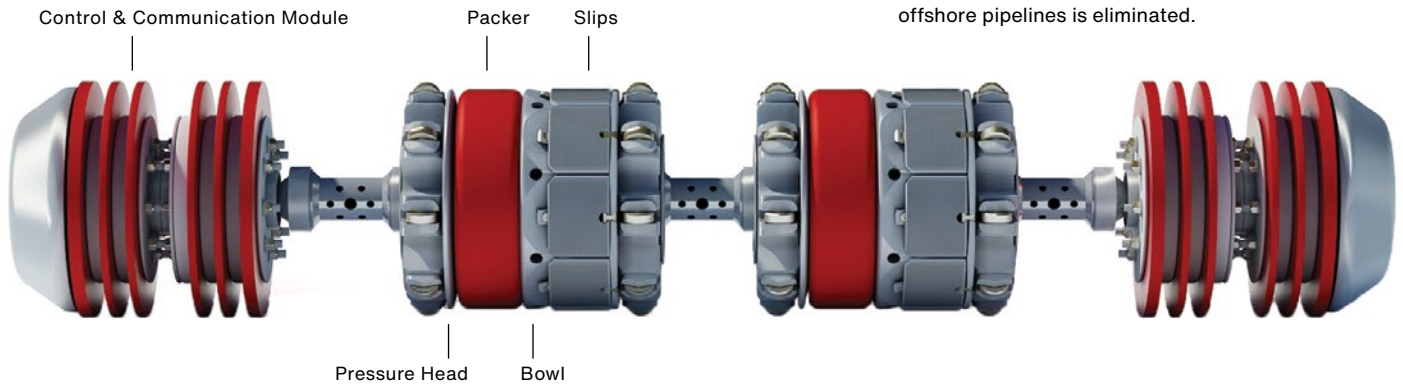




Pipeline Solutions

SmartPlug® isolation technology is the only system of its kind that makes it possible to hydrotest a pipeline section immediately after remedial pipe work without breaking the integrity of the isolation, saving time and money.



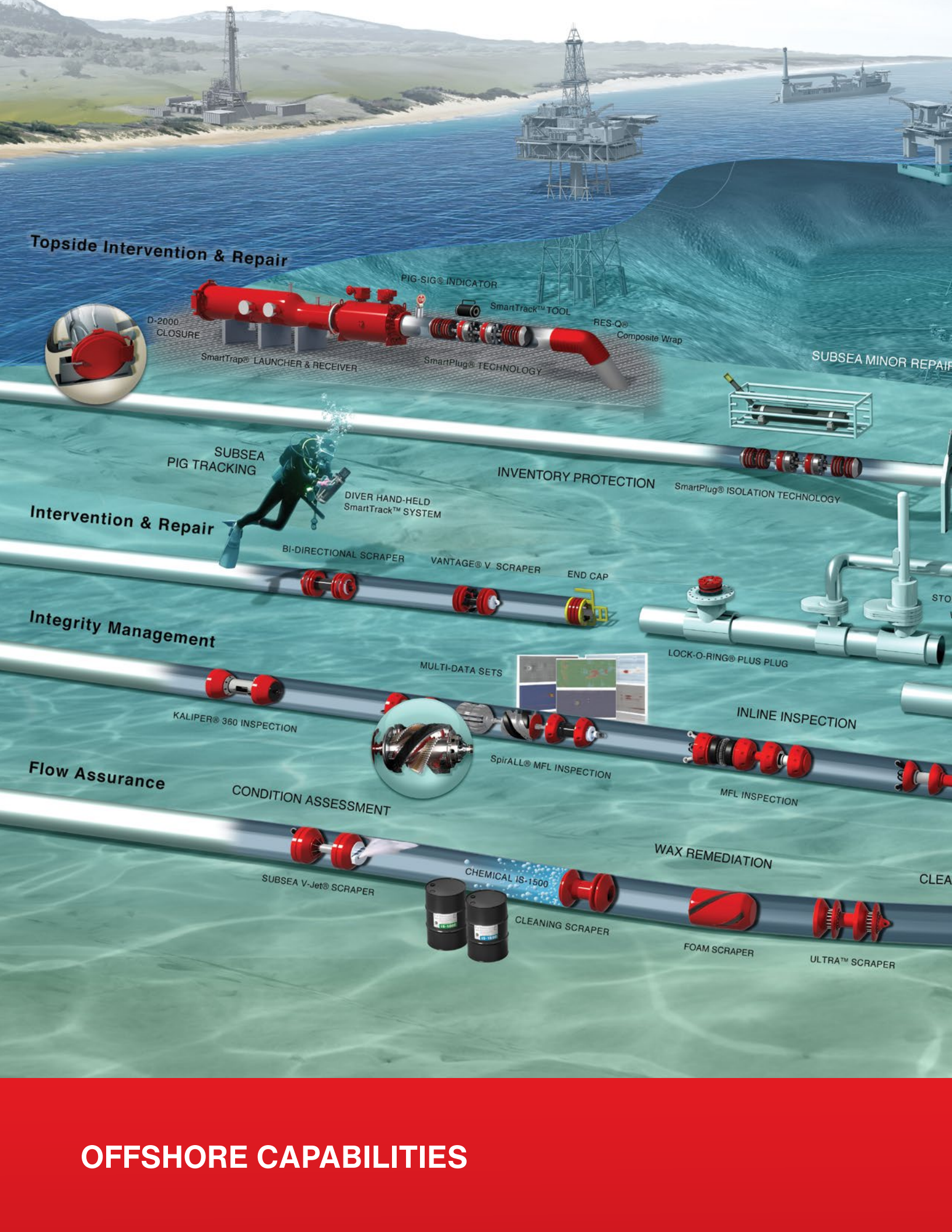
ENVIRONMENTAL IMPACT

SmartPlug® isolation technology helps customers save money while protecting the environment. Intervention and repairs are completed with minimum disruption, providing these benefits:

- Reduced down time during maintenance.
- Bleed down volume is eliminated or drastically reduced, avoiding release of hydrocarbons.
- No need to treat chemicals or dispose of contaminated water before re-commissioning.
- Eliminates risk of introducing new leak paths.
- Risk of accidental flooding during construction of offshore pipelines is eliminated.

FEATURES

- **Highly Piggable:** Bi-directional pigging functionality through individual articulated modules, in all pipeline diameters ranging from 8" to 48".
- **Intelligent:** Remotely operated and tracked through the SmartTrack™ system, also enabling off-site activation and remote monitoring.
- **Adaptable:** Fully customized and configured to any project need.
- **ATEX:** Full ATEX/Ex/UKEx zone 1 capability on both the SmartPlug® tool and SmartTrack™ communication system.
- **Safe:** Double-block isolation ensures high safety standards, confirmed with DNV certification.
- **Secure:** Self-locks in a fixed position using the pressure differential across the plugging modules. Includes multiple integrated contingency release mechanisms.
 - **Durable:** Proven in-field, long-term isolation capabilities (1000 days+).



Topside Intervention & Repair



D-2000 CLOSURE
SmartTrap® LAUNCHER & RECEIVER
PIG-SIG® INDICATOR
SmartTrack™ TOOL
RES-Q® Composite Wrap
SmartPlug® TECHNOLOGY

SUBSEA MINOR REPAIR

SUBSEA PIG TRACKING



DIVER HAND-HELD SmartTrack™ SYSTEM

INVENTORY PROTECTION

SmartPlug® ISOLATION TECHNOLOGY

Intervention & Repair

BI-DIRECTIONAL SCRAPER

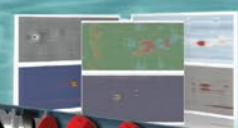
VANTAGE® V SCRAPER

END CAP

Integrity Management

KALIPER® 360 INSPECTION

MULTI-DATA SETS



LOCK-O-RING® PLUS PLUG

INLINE INSPECTION

Flow Assurance

CONDITION ASSESSMENT

SpirALL® MFL INSPECTION

MFL INSPECTION

WAX REMEDIATION

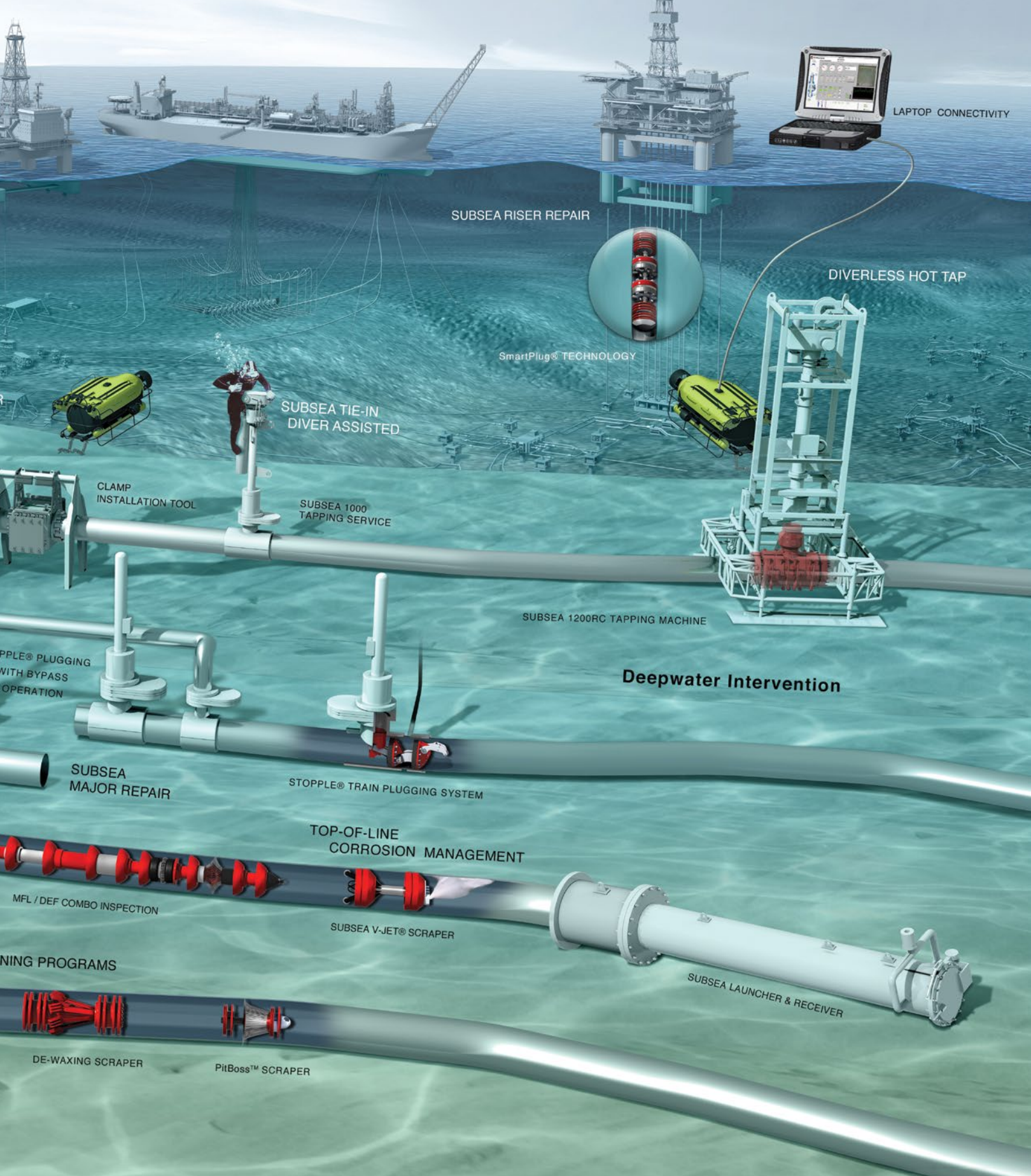
SUBSEA V-Jet® SCRAPER

CHEMICAL IS-1500

CLEANING SCRAPER

FOAM SCRAPER

ULTRA™ SCRAPER



LAPTOP CONNECTIVITY

SUBSEA RISER REPAIR

DIVERLESS HOT TAP

SmartPlug® TECHNOLOGY

SUBSEA TIE-IN
DIVER ASSISTED

CLAMP
INSTALLATION TOOL

SUBSEA 1000
TAPPING SERVICE

SUBSEA 1200RC TAPPING MACHINE

Deepwater Intervention

PPLE® PLUGGING
WITH BYPASS
OPERATION

SUBSEA
MAJOR REPAIR

STOPPLE® TRAIN PLUGGING SYSTEM

TOP-OF-LINE
CORROSION MANAGEMENT

SUBSEA V-JET® SCRAPER

SUBSEA LAUNCHER & RECEIVER

MFL / DEF COMBO INSPECTION

NING PROGRAMS

DE-WAXING SCRAPER

PitBoss™ SCRAPER



SmartPlug® isolation technology makes it possible to isolate pipelines safely at any operating pressures. This means that maintenance and repairs can be conducted quickly, without bleeding down the entire system.

Downtime worries? Problem solved.

A pipeline under repair bleeds money with every passing hour. The solution? SmartPlug® inline isolation technology. Operated by remote through wall communication, the SmartPlug tool's "double-block and monitor" isolation capabilities ensure a safe, reliable pressure isolation.

One system, many applications.

TDW has used SmartPlug® technology globally during hundreds of maintenance operations like these:

- Valve, riser and launcher system repair and replacement.
- Pipeline section repair and replacement.
- Pressure testing and leak detection of pipeline sections.
- Isolations of live pipelines during commissioning, decommissioning, re-routing and tie-in — onshore and offshore.
- Protection of pipelines and inventory during construction and overhead lifting operations.





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