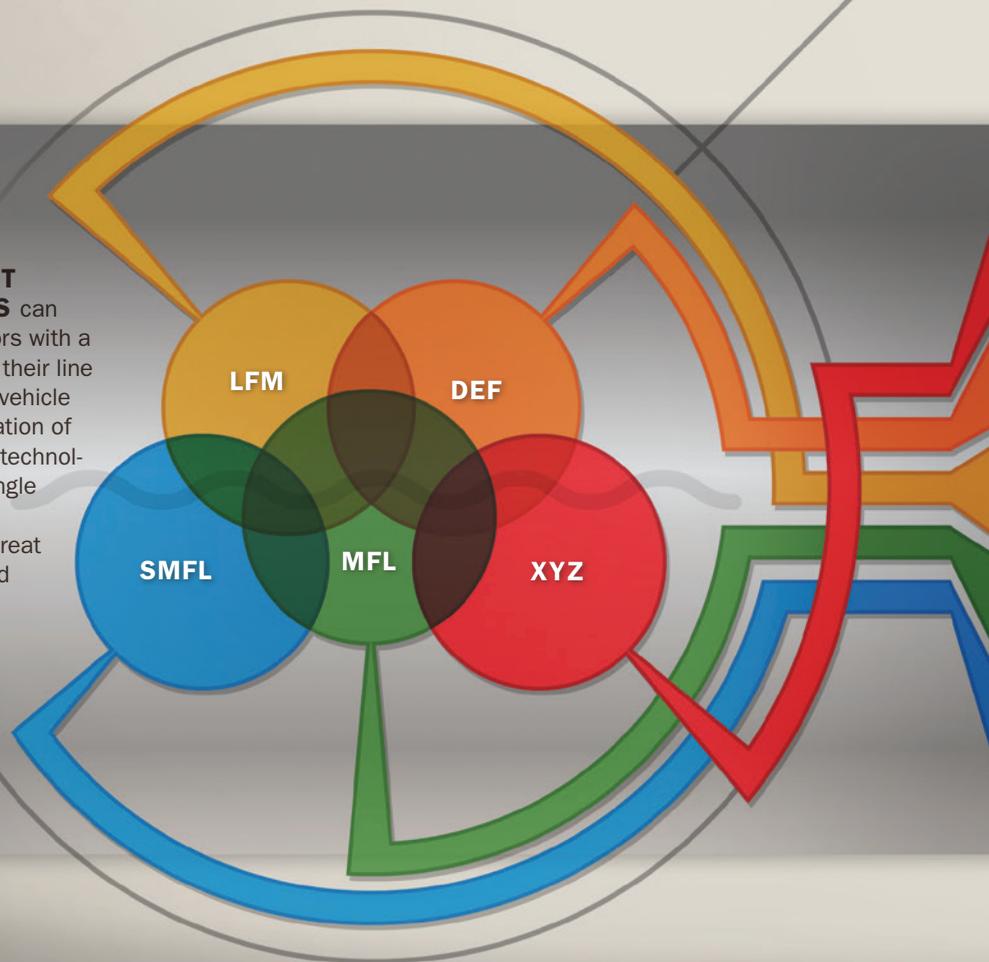# Four steps to Battling Pipeline Integrity Threats

PIPELINE INTEGRITY: A COMPREHENSIVE VIEW

Pipeline operators face the continual challenge of delivering energy to the world in the safest and most economical ways. They battle aging infrastructure, weather economic pressures, adjust to increasing regulation, and engage communities to achieve social license. Fortunately, continual advances in pipeline threat detection, such as multiple dataset platforms, are supporting them every inch of the way. **Follow steps 1-4 to see how.**
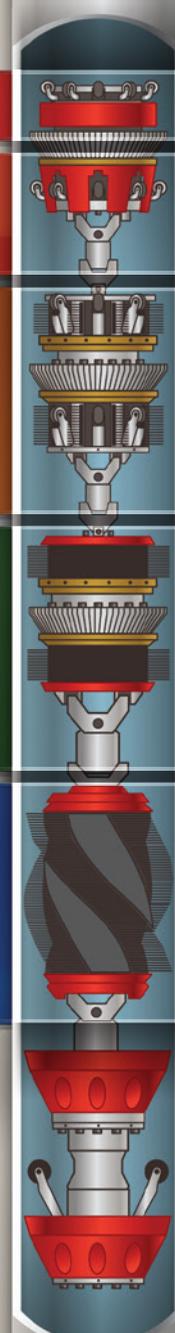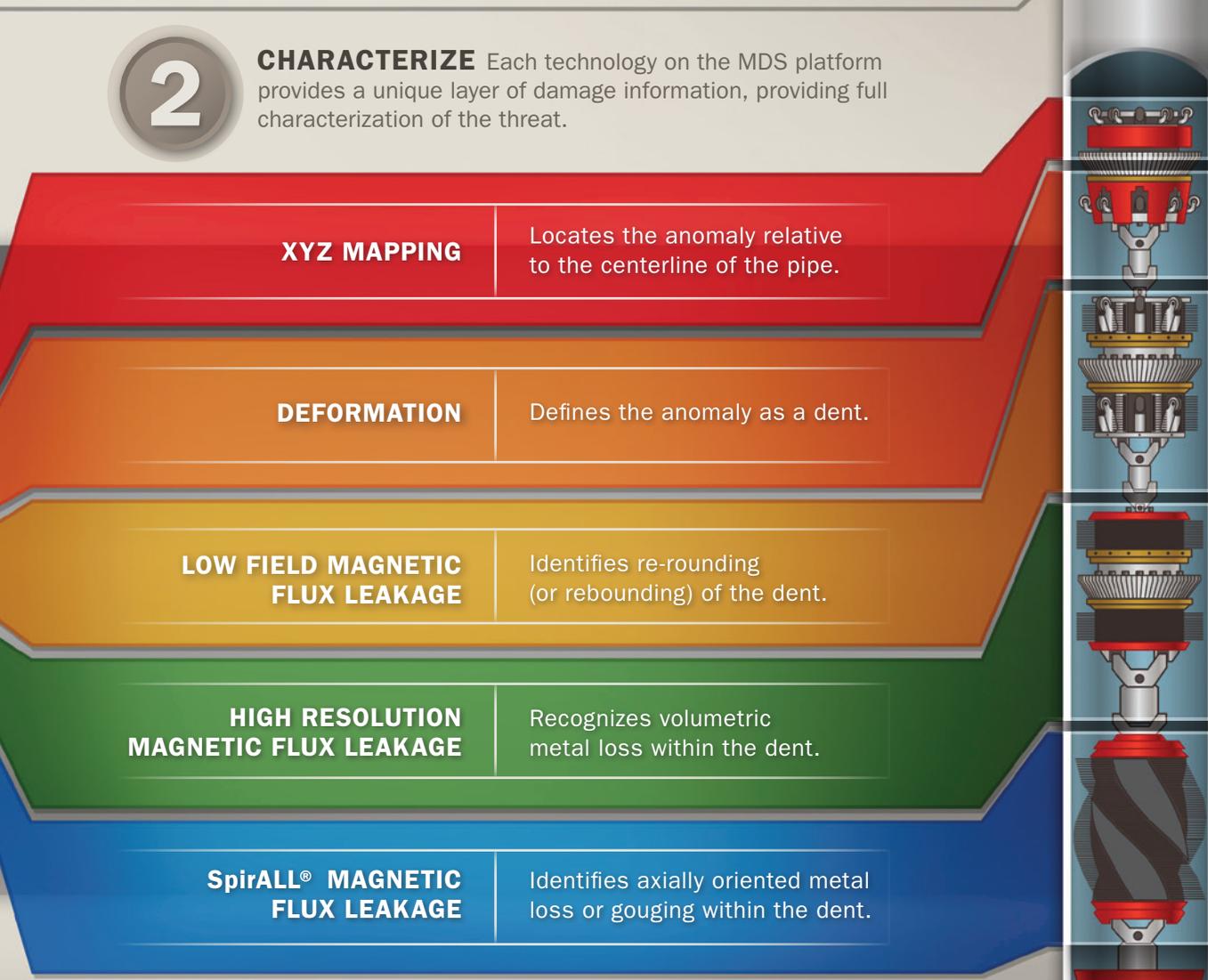
1 DETECT While running an MDS platform, mechanical (i.e., third-party) damage is detected by a number of onboard technologies.

2 CHARACTERIZE Each technology on the MDS platform provides a unique layer of damage information, providing full characterization of the threat.

MULTIPLE DATASET (MDS) PLATFORMS can supply pipeline operators with a comprehensive view of their line integrity by providing a vehicle for an evolving combination of overlapping inspection technologies to be run on a single tool, at the same time. **THE RESULT:** robust threat detection and advanced characterization.

LFM
DEF
SMFL
MFL
XYZ

XYZ MAPPING	Locates the anomaly relative to the centerline of the pipe.
DEFORMATION	Defines the anomaly as a dent.
LOW FIELD MAGNETIC FLUX LEAKAGE	Identifies re-rounding (or rebounding) of the dent.
HIGH RESOLUTION MAGNETIC FLUX LEAKAGE	Recognizes volumetric metal loss within the dent.
SpirALL® MAGNETIC FLUX LEAKAGE	Identifies axially oriented metal loss or gouging within the dent.

3 REPORT When critically assessed by specialized software and data analysts, the overlapping MDS data helps determine the exact characteristics and severity of the entire series of interacting threats – a re-rounded dent with gouging and crack-like features.
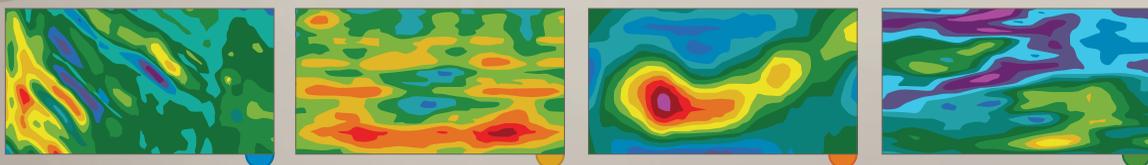
Metal loss, re-rounding, cycling, dent length and depth, strain and severity ranking.

4 PRIORITIZE/MITIGATE With the final integrity report delivered in close proximity to the inspection, the pipeline operator is able to:

· Assess the pipeline's most critical needs

· Prioritize maintenance/repair based on severity

· Minimize cost by avoiding unnecessary digs

· Ensure safe operation for its employees and the community