The ClampOn DSP Well Collision Detector is designed to prevent collisions involving directional drilling within the proximity of existing wells. ClampOn DSP Well Collision Detectors provide operators with real time data so that collision risk analysis calculations are not the only factor determining the bit’s proximity to existing wells.

This method uses ClampOn non-invasive ultrasonic sensor technology in the form of a spectrum analyzer. The spectrum analyzer digitizes the ultrasound allowing frequency analysis in real-time. The procedure is patent pending.

The process involves ClampOn DSP Well Collision Detectors being installed topside on all existing wells in close proximity to the well being drilled. The drill string’s approach to existing wells will create an increase in the ultrasonic signal being observed topside. When dramatic ultrasonic increases are observed, drilling will be halted and data analyzed. After analysis is complete, the drill string can be diverted or drilling can resume with the confidence that a collision has been avoided or that initial calculations were confirmed.

The use of directional drilling is only going to increase as fields mature. Proper collision avoidance techniques should be considered when preparing for the drilling operations. The ClampOn DSP Well Collision Detector provides the operator with an advanced real time collision monitoring system with minimal equipment and personnel requirements.

Procedure Goals
- Prevent drill bit from colliding with existing well casing during directional drilling operations
- Give engineers physical proof of drill strings proximity to existing wells
- Prevent environmental damages caused by collisions
- Help to increase safe drilling speed and decrease downtime caused by collisions

Installation
- Easy non-invasive installation of hardware
- No hot work permit required
- Intrinsically safe sensors
- No need for production shut-down to install
- Minimal impact to daily operations on the platform
- Mounted on conductor pipe
**SYSTEM DESIGN**

ClampOn DSP Well Collision Detector, Ex ia version (also available in Ex de version), is designed to prevent collisions involving sidetrack drilling within the proximity of existing wells. The sensor provides operators with real-time data so that collision risk analysis calculations are not the only factor determining the bit’s proximity to existing wells. It is non-intrusive and clamped on the pipe surface; hence no parts are in contact with the flow. All ClampOn topside sensors have two-way communication via RS-485, can be upgraded / customized by software download, contain no moving parts and are easy to relocate. An optional computer running ClampOn software can be used to handle data storage and communication to client control system.