

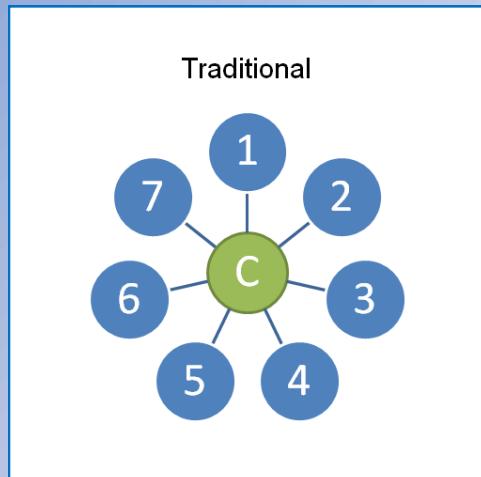
# VibLink & NavLink

## A New Approach to an Old Problem



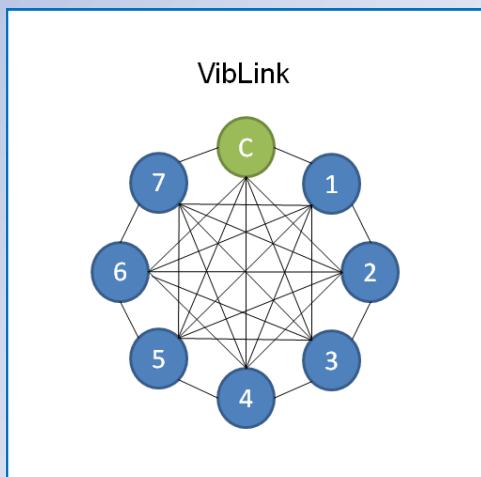
### The Problem

- Seismic crews around the world are turning away from traditional acquisition techniques and starting to use high productivity Vibroseis methods
- The goal is to be more efficient, more VPs per day. To achieve this, more vibrators are being used
- More vibrators and high productive techniques require collision management
- Some of the techniques, such as DS4 (time/distance rule) require decision making, which generates extra messages. This inherently causes a slow down



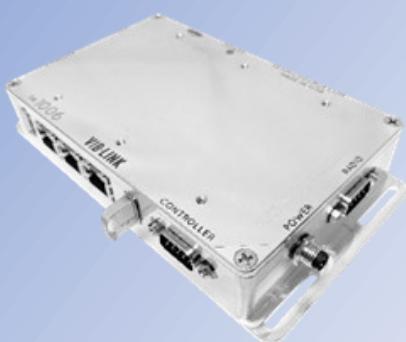
### The Solution

- Create a communication system that is capable of delivering messages across many nodes without collision loss over large distances
- Provide a way to allow the individual vibrators to make decisions on the time/distance rules without involving a centralized decision maker



### The Hardware

- SSC Radio Control System
- Raveon M8/M21 Digital Radio
- 50W Amplifier



VibLink Module



VibLink Unit with Radio and Amplifier

# VibLink & NavLink

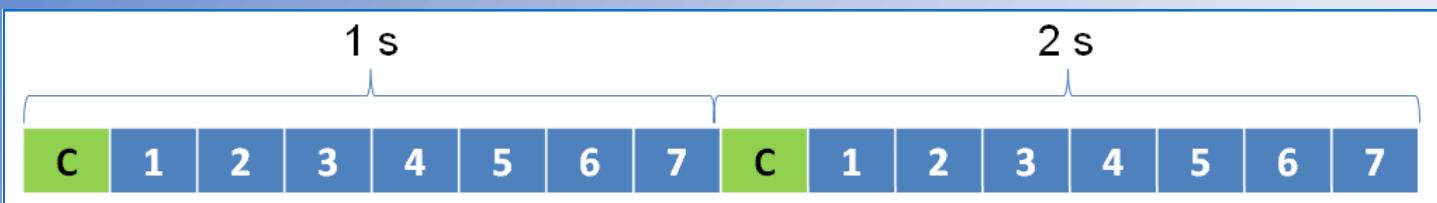
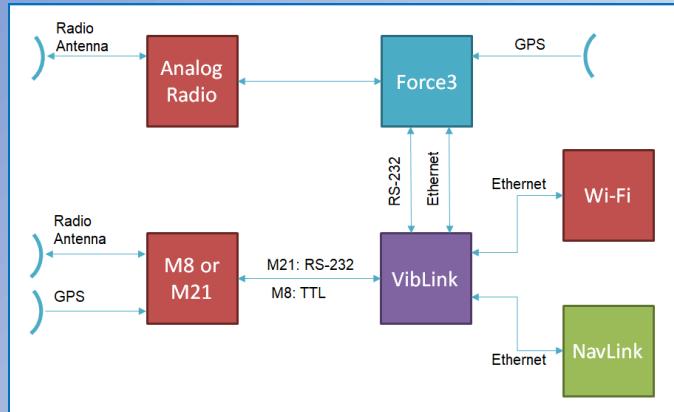


## Hardware/Software for Increased Production

### How does VibLink work?

**The VibLink module** - Each VibLink unit contains a Linux-based co-processor board, a digital radio, and a 50 watt amplifier. The coprocessor implements the TDMA process, the radio handles the communications, and the amplifier ensure the signals are sent out at maximum strength.

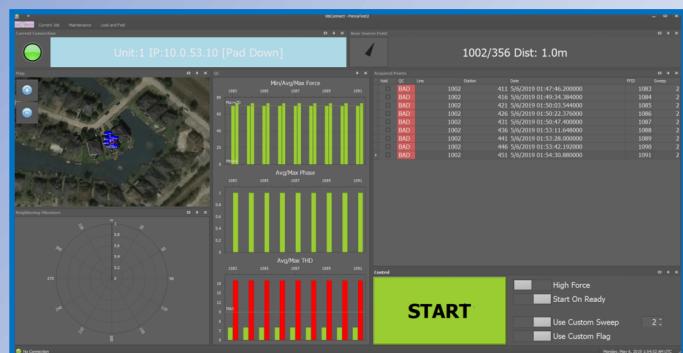
**The VibLink system** - Each vibrator, plus the central recorder, is equipped with a VibLink module. The VibLink module uses advanced TDMA techniques to multiplex seven vibrators and the doghouse on one radio channel. And does this all in one second windows. With additional Vibrators, additional seconds are added. The Universal Encoder 3 uses its time slot to send out status updates and request PSS/PFS data. Each Force 3 controller uses its time slot to send out its location, status, and QC Information.



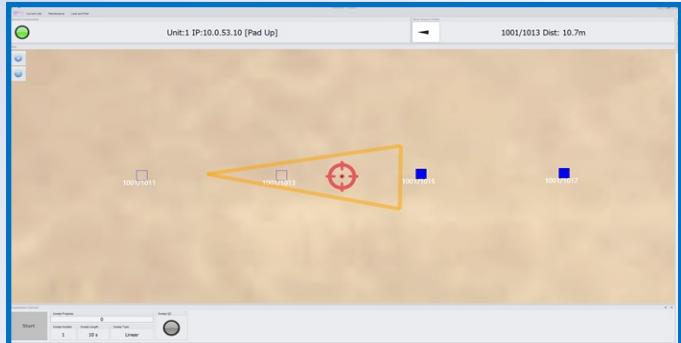
### NavLink Software

NavLink is an application that runs on a computer in the vibrator.

- Connects to the VibLink radio and the Force Three unit via network
- Provides full navigation and support for vibrator operation (start, abort sweep, download and save VSS files, etc.)
- Monitors the location and status of all other vibrators
- Displays acquired points from nearby vibrators



NavLink QC Screen



NavLink Operator Screen