

# iMA™ intelligent Machinery Analysis

• M2M Data Corporation has partnered with Beta Machinery Analysis to offer iMA, the intelligent approach to machinery analysis. With iMA you get everything you need to optimize the performance of your equipment, and with three levels of service available, you're sure to find the level of service that's right for you.

	Level 1	Level 2 (Includes Level 1)	Level 3 (Includes Level 2)
	BASIC Condition Assessment	ADVANCED Condition Assessment	Optimization & Fleet Management
Compressor Diagnostics	<ul style="list-style-type: none"> <li>Overall Vibration</li> <li>Discharge Temp (per cylinder or stage)</li> <li>Discharge Pressure (per stage including interstage)</li> <li>Suction Pressure (per stage)</li> <li>Oil Pressure</li> <li>Oil Temperature</li> </ul>	<ul style="list-style-type: none"> <li>Rod Load (by degree per throw)</li> <li>Rod Reversal Amplitude (and degrees) (both measures to avoid catastrophic failure)</li> <li>Discharge Temp Deviation (detect valve/ring problems)</li> <li>Packing Temperatures</li> <li>Discharge Volumetric Efficiency Per End (improved operating reliability)</li> <li>Speed (for assessing baseline conditions)</li> <li>Compressor vs. Driver Power Rating</li> </ul>	<ul style="list-style-type: none"> <li>Availability and Reliability (over specified time)</li> <li>Average Recycle and Suction Pressure Control</li> <li>Flow Per Cylinder</li> <li>Compressor Capacity Utilization (current &amp; average)</li> <li>Driver Power Utilization (current &amp; average)</li> <li>Theoretical Indicated Power Per End</li> <li>Efficiency Per Stage</li> <li>Engine Emission Monitoring</li> <li>Baseline Deviations</li> <li>Advanced Trend Logic</li> <li>Summary Of Load Step Changes</li> <li>Summary Of Trip And Downtime Reporting</li> <li>Optional (recycle valve position, suction pressure control, measured fuel gas flow)</li> </ul>
Engine Diagnostics	<ul style="list-style-type: none"> <li>Engine Oil Pressure</li> <li>Engine Oil Temp</li> <li>Overall Vibration</li> <li>Jacket Water Temp</li> </ul>	<ul style="list-style-type: none"> <li>Air Manifold Temp Deviation</li> <li>Pressure Deviations (efficient engine operation)</li> <li>Exhaust Temp (protect cylinder)</li> <li>Exhaust Temp Spread Across Cylinders (preserve cylinder life; avoid premature wear)</li> <li>Temp Differentials (jacket water &amp; lube oil)</li> </ul>	
Motor Diagnostics	<ul style="list-style-type: none"> <li>Bearing Temperatures</li> <li>Overall Vibration</li> </ul>	<ul style="list-style-type: none"> <li>Temp Deviation (winding vs. purge air)</li> <li>Baseline assessment (temp vs. load)</li> </ul>	
Reporting	Status reporting with alarms <ul style="list-style-type: none"> <li>Red</li> <li>Yellow</li> <li>Green</li> </ul>	Basic Condition Report <ul style="list-style-type: none"> <li>Events ranked in priority status</li> <li>Event history</li> <li>Alarms</li> </ul>	<ul style="list-style-type: none"> <li>Complete Online Report plus issue resolution, monthly reporting, user configurable data. Engine emission report</li> <li>Link to iPM™ service and CMMS system for preventive maintenance and work order management</li> </ul>
Machine Analysis	<ul style="list-style-type: none"> <li>Automatic Alarming (real time)</li> </ul>	<ul style="list-style-type: none"> <li>Automatic alarming, plus machine experts review alarms and offers comments and recommendations</li> </ul>	<ul style="list-style-type: none"> <li>Automatic Alarming, plus machine experts review alarms and offers comments and recommendations. Conference calls with customer to review recommendations and discuss reliability issues.</li> </ul>
Compressor Management & Improvement Opportunities			<ul style="list-style-type: none"> <li>Key Performance Indicators (for measuring performance to contract requirements)</li> <li>Fleet Management – reporting and comparison of units by key performance indicators.</li> <li>Optimization Improvements – identifies improvement potential (increased production, availability, etc.).</li> </ul>

## About M2M Data Corporation

M2M Data Corporation is the leading provider of remote monitoring and control services to the energy industry. With solutions for compression services, exploration and production, transportation and pipeline, power generation, and driver and automation equipment OEM segments, M2M's Services helps customers achieve operational excellence. With iServices, you'll be better able to honor contractual commitments, maximize production, and improve efficiency.

### Other Optional Features

If the three levels of iMA service aren't enough to meet your needs, we offer additional services in conjunction with Beta Machinery Analysis to satisfy all of your machinery analysis requirements, including:

1. **Optimize Compressor Load Curves:** Pricing varies depending on number of operating points.
2. **Vibration and Lube Oil Analysis:** Remote vibration analysis using spectrum analysis. Review lube oil analysis reports. Customized program is tailored to customer's requirements
3. **Reliability and Maintenance Management Consulting:** Expert consulting advice to review a customer's in-house reliability, maintenance and monitoring program. Recommendations and implementation support available.
4. **Equipment Troubleshooting Service:** Machinery experts will assist in condition assessment, vibration/pulsation analysis, skid and foundation assessments, failure analysis, and other troubleshooting tasks.
5. **Training and Support:** Beta's website ([www.BetaMachinery.com](http://www.BetaMachinery.com)) provides free training tools (case studies, articles, and DVD training modules). Seminars are also provided in troubleshooting, monitoring, optimization, and compressor design.



### Part of M2M's iServices™ Suite

iMA is part of M2M Data Corporation's iServices Suite. It is designed to work seamlessly with our iSCADA®, iDA™, iPM™, iCC™, and iDispatch™ services. We can analyze your data in iMA that is collected automatically through the iSCADA or manually through the iDA. We can then integrate the data with iPM to improve your maintenance operations. Use iMA with any or all of M2M's services to tailor a solution that best suits the needs of your operation.

 **Want to learn more?**

Visit us online at [www.m2mdatacorp.com](http://www.m2mdatacorp.com) or call us toll free at (877) I TRY M2M or (877) 487 9626