ABS Nautical Systems
Fleet Management Solutions

ABS Nautical Systems

- Comprehensive Fleet Management
- Compliance Centric
- Used onboard for 30 years
- Supports a safety culture
- Marine and Offshore Focus
- Integrated Information
- Built around life of the mariner
- Implement for Success Methodology

Comprehensive Fleet Management Software

• A complete and fully integrated solution:
  – Foster a Safety Culture
  – Achieve Compliance
  – Improve Efficiency
  – Drive Performance

• Supporting Capabilities
  – Document Management
  – On Demand Reporting

Best-in-Class Solutions

Asset Management
Maximize the economic value of your Assets

Compliance Management
Facilitate a compliance culture to increase uptime and drive revenue

Workforce Management
Deliver a properly trained, documented and certified crew

Integrated Solutions

HOSTED OR INTERNAL

Focused on Efficiency and Usability

- Intuitive, streamlined, consistent, integrated
- One click access to data and actions
- Dynamic work spaces
- Dashboards
- Customized searches
Implement for Success

A six stage process of configuration and training that leads to successful fleet-wide adoption of the NS software.
Fleet Management Center of Excellence

**THOUGHT LEADERSHIP**

**BEST PRACTICE WORKFLOWS**
NS works closely with clients to ensure that requirements and expectations are fully achieved with NS implementations.

**WHITE PAPERS**
NS maintains a library of informative documents explaining foundational concepts of using NS effectively and implementing mature processes.

**SME CONSULTING**
Senior NS professionals in various disciplines provide guidance for complex business and operational challenges.

**BALANCED SCORE CARD**
A tool to measure the effectiveness of system configuration and adoption, providing a roadmap for achieving enterprise-wide adoption.
Investment Agenda – Product Roadmap

Vision: To provide world class solutions to meet critical business challenges

Recently Delivered
- Serialized Items
- Crew Planner
- Custom Forms
- Hull Manager 3D
- Integrated Installer
- Budget Visibility
- Technology Refresh

Near Term
- Vessel Performance
- Mobile Apps
- Web User Interface
- Environmental Compliance (MRV, IHM, MARPOL V, etc.)
- KPI Support

Future Plans
- Knowledge Manager
- Warehousing
- Enhanced RCM
- Performance Manager
- Self-service Portals

Technical
- Cloud
- Automated Data Capture
- Mobile
- Workflow
- Web N-tier

Software and Services for Complete Solutions

Technical Solutions
- Cloud
- Installed
- Doc Mgt
- Reporting

Functional Solutions
- Asset Management
- Compliance Management
- Workforce Management
- Professional Services
- Office
- Vessel
- Enterprise

SOLUTIONS

NS Asset Management

Integrated Asset Management: *Maximize Value and Drive Efficiency*

- **Maintenance**: Drives efficiency, reduces downtime and lowers total cost of maintenance
- **Structure**: Track anomalies and maximize life of asset
- **Materials**: Maintenance plan supports competitive bidding for right sized inventory
- **Procurement**: Optimize procurement process to reduce costs and enable eCommerce
- **Drydock**: Proactively plan and negotiate scope, costs and timelines

A comprehensive solution that enables cost and operational efficiencies at every stage in the asset lifecycle.

- Optimize resources
- Improve operating margins
- Reduce the cost of Drydock
Integrated Asset Management Solution Modules

Integrated information across maintenance, structural integrity, purchasing, safety and quality management processes.

- Consistency of processes
- Better information
- Central repository
- Decision Support and Knowledge Transfer

NS Compliance Management

Plan-driven design facilities and enforces processes that mitigate risk and consistently demonstrate compliance.

- Unified Planning
- Shared Data
- Continuous improvement
- Safety culture

Crew Planner
Assigns activities onboard and onshore

Maintenance Time Plan
Plans activities for structural and machinery maintenance

Quality Time Plan
Tracks all activities for vettings, inspections, drills and audits

Voyage Planner
Captures voyage, environmental and operations events

Integrated Compliance Management Solution

Integrated information to facilitate planning, execution and documentation of all compliance.

- Statutory and classification activities
- Machinery and structural maintenance
- Safety and environmental
- Consistently demonstrate compliance
NS Workforce Management

“Right person, right task, right time”

- Enabling a process for delivering a properly trained, documented and certified crew
- Fully compliant gross-to-net payroll systems
NS Workforce Management Solution

- Identify and retain the best performers
- Reduce costs to attract, manage and retain crew
- Demonstrate compliance to charter parties
- Visual crew planning tool
Capture, manage and report on all the information required to demonstrate compliance to Subchapter M.

- Everything is visible and accessible from one screen
- Wizards simplify critical tasks and enable accurate data capture for reporting
- Subchapter M dashboard provides push button access to all required reporting
- Cloud-based solution with subscription pricing
- Turnkey implementation ensures success from day one

Additional Services:
- Business Process Mapping
- Best Practices Consulting
- Safety Management Systems Consulting through ABS Group
Unlocking the Power of Data

- Standard Reports embedded
- Report views and tools support custom reports
  - Views cover all operational areas
  - Supports management reporting
  - Real time reports on live transaction data
  - Supports ETL to data warehouse
- Custom report development services available
Document Management System

- Manage document libraries
- Integrated to NS Workflow
- Version control and change management
- Ship to shore acknowledgement
- Automated document distribution onshore and onboard

Ensures required documentation is easily accessible and shared appropriately
The ABS Nautical Systems Advantage

Knowledge + Software + Solutions = Value
SOFTWARE MODULES

Facilitates maintenance planning to improve cost control, resource management and equipment reliability.

- Easy access to information for immediate action on critical tasks to avoid compliance penalties and ship stoppers
- System is adaptable and can grow with client operations
- Plan is flexible and configurable improving maintenance planning
- Integration across modules streamlines maintenance processes and improves efficiency

Key Features

- Dashboards
- Equipment Explorer Shared Knowledge Base
- Maintenance Plan
- NS Integration with Purchasing, HSQE, Drydock, Hull Manager
Purchasing Manager

Enables unified management of procurement and inventory control activities to deliver an efficient, cost effective and compliant procurement process.

- Access to critical information in a single location increases efficiency
- Streamlines purchasing process through automation
- Get best possible price through multiple bids with automatic currency conversion
- Integration across modules streamlines purchasing processes and improves efficiency

Key Features:
- Dashboards
- Automated Inventory Replenishment
- Competitive Bidding with robust quotation process
- NS Software Integration

Drydock Manager

Supports faster Drydocking with management tools for planning, bidding, execution, analysis and negotiation.

- Facilitates competitive bidding and shipyard negotiation for better cost control
- Streamlines planning and execution process through greater visibility and oversight of jobs
- Improves future Drydockings through accurate cost accounting
- Integrates maintenance history, Drydock planning and execution and final negotiation

Key Features:
- Drydock Specification
- Shipyard Negotiation support
- Job Tracking
- Cost Analysis Reports
- NS Software Integration
Hull Manager and Hull Manager 3D

Documents structural conditions to drive more efficient planning and management of structural maintenance and the drydock process. Map gaugings and structural conditions in a 3D virtual environment.

- Supports both structural inspection and structural management
- Mitigates risk through access to accurate structural information with easy to understand graphics
- Greater visibility to inspections enable more efficient documentation of asset conditions
- More efficient and accurate process for repair of structural anomalies

Key Features

- Graphic Condition Representation
- Inspection Scheduling
- Map Gaugings
- NS Software Integration
Voyage Performance Manager

Provides visibility into critical performance areas, including environmental compliance, vessel performance and voyage tracking.

- Easily access critical information for voyage planning, performance monitoring and environmental impact to maintain an efficient and compliant operation
- Integrates with vessel’s automation system to facilitate accurate reporting and reduce crew workload
- Optimize future voyages through detailed performance analysis

Key Features:
- Performance KPIs
- Routing
- Event Based Reporting
- Integration to Automated Data Collection
Crew and Payroll Manager

Supports a comprehensive workforce management process to easily and efficiently deliver the right crew, for the right task, at the right time, to reduce costs and drive compliance.

- Access key crew utilization metrics to prioritize crew decisions and take immediate action.
- Easily locate qualified replacements for due-off crew with a single click
- Foster successful and productive career management to increase retention
- Facilitates training and certification compliance

Key Features:

- Dashboards
- Crew Scheduler
- Crew Work/Rest Hours
- Gross-to-net Payroll
- Integration with Financial Systems
An integrated Document Management System for document control, access, revision and distribution ensures that required documentation is easily available and shared appropriately.

- Link controlled documents, equipment, OEM Specifications, bulletins, drawings, procedures and others
- Document replication across fleet
- Build custom hierarchy of documents, forms, templates
- Built in links to other key modules

Key Features

- Tagged keyword search functionality
- Full document details including revision history
- Publish and approval controls and workflow
- Publish documents to selected groups, vessels and vessel types
HSQE Manager

Drives a safety culture with a process centered on safety, risk mitigation and management of change that ensures compliance and reduces port state detentions.

- Take action on overdue quality jobs, open incidents and corrective actions with a single mouse click
- Easy access to critical compliance reports
- Risk assessment tools for maintenance tasks help plan execution in the safest way possible
- Facilitate continuous improvement

Key Features:

- Dashboards
- Quality Time Plan
- Built in Custom Reports
- Job Safety Analysis
- Behavioral Based Safety
- NS Software Integration

Vetting Manager

Supports the vetting process from pre-inspection through acceptance.

- Easy access to all the information needed to prepare for and manage Vetting inspections
- Observations by inspector can be linked to corrective actions to fully document the result
- New responses can be added so the vetting response process improves over time

Key Features:
- OCIMF Questionnaire
- Observations
- Response Library
- NS Software Integration

INTEGRATION FLOWS

Real World Problems Require Integrated Solutions

• Maintenance issues may require people, process or technical solutions
• Quality issues may require materials, maintenance, process or people solutions
• Safety issues may require materials, maintenance, process, people or technical solutions
• *Linkages are critical and must be managed*
Problem – Critical Equipment Failure

<table>
<thead>
<tr>
<th>Nautical Systems</th>
<th>Maintenance</th>
<th>HSQE</th>
<th>Crewing/Payroll</th>
<th>DMS</th>
<th>Purchasing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Work Order</td>
<td>Incident (RCA)</td>
<td>Training</td>
<td>Edit SMM</td>
<td>Replenish Stock</td>
</tr>
<tr>
<td></td>
<td>New SJ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- HSQE
- Crewing/Payroll
- DMS
- Purchasing

- Dashboard & Reports
- Statutory Reporting
- KPI's
- Management System Review
- Alerts & Notifications

Problem – Ballast Water Exchange Reporting

Vessel Performance

- Ballast Water Exchange Event
- Noon Report
- Ballast Water Management Plan

HSQE

- Quality Job
- Inspection Report
- Training

Dashboard & Reports
- Statutory Reporting
- KPI's
- Management System Review
- Alerts & Notifications

Problem – Lifeboat Drill Failure

**HSQE**
- Lifeboat Drill: LB uncontrolled fall to water
  - Incident/Injury
  - CAR
- Critical Equipment Failure: Work Order
  - Training
  - Report
  - CAR

**Crewing**
- Illness/Injury
  - CAR
  - Report

**Maintenance**
- Replenish parts/critical spares

**Purchasing**

**Dashboard & Reports**
- KPI's
- Management System Review
- Response Library
- Reporting

**Powerful. Simple. Reliable.**
## Problem – Internal Inspection

<table>
<thead>
<tr>
<th>Vetting</th>
<th></th>
<th></th>
<th>Library updated via Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSQE</td>
<td>CAR (RCA)</td>
<td>CAR</td>
<td></td>
</tr>
<tr>
<td>Maintenance</td>
<td>SJ</td>
<td>Work Order</td>
<td></td>
</tr>
<tr>
<td>Crewing</td>
<td>Change Qualification Requirements for Company</td>
<td>Request to Order Parts</td>
<td></td>
</tr>
<tr>
<td>Purchasing</td>
<td></td>
<td></td>
<td>Add to RFQ/PO or Change Order for DDK</td>
</tr>
</tbody>
</table>
Opportunity – Vessel Performance

Vessel Performance
- Monitor Fuel Consumption
- Analyze Parameters
- LEARN: Hull resistance

Maintenance
- Create SR: Hull cleaning
- Work Order

Drydock
- Create SJ: Antifouling coating

Dashboard & Reports
- KPI's
- Management System Review

Problem – ECA Compliance- Fuel Switching

<table>
<thead>
<tr>
<th>HSQE</th>
<th>Safety Management System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crewing/Payroll</td>
<td>Training</td>
</tr>
<tr>
<td>Voyage Management</td>
<td>ECA Compliance- Fuel Switching event</td>
</tr>
<tr>
<td>Purchasing</td>
<td>PO</td>
</tr>
</tbody>
</table>

Dashboard & Reports
- Statutory Reporting
- KPI’s
- Management System Review
- Alerts & Notifications

Problem – Crew Member Slips and Falls

- RCA (bad coating)
- CAR
- CAR
- Incident Report
- Illness/Injury Report
- Training
- Update DDK Spec
- Buy Coating Material
- Work Order

Dashboard & Reports
- Statutory Reporting
- KPI’s
- Management System Review
- Alerts & Notifications

PROFESSIONAL SERVICES

Accelerate your projects and improve your operations

- Data
- Implementation and Project Management
- Advisory Services
- Training and Documentation
- Custom Reports, Forms and Interfaces
- Managed Services/Enhanced Support
Data

- Gather, cleanse and populate all machinery data
- Convert and restructure legacy data
- Build vessel hierarchy for efficient operations

Benefits:
- Working fleet management system set up quickly and efficiently
- Leverages offshore and marine experts
- Cost effective way to accelerate project
Implementation and Project Management

- Turnkey solutions – onshore staff and crew
- “Implement for Success” methodology delivers proven results
- NS Project Management Office monitors project execution and health
- Best practice consulting available
- Training solutions tailored to your business and employee type
Advisory Services

- ABS and NS Best Practices Business/Industry Knowledge
- Adapting business processes to proven technology solutions
- NS Fleet Management Center of Excellence
  - Best Practice Workflows
  - Training and Documentation
  - System Concepts and Optimization
- Technical and functional health checks using a balanced scorecard approach

Supports Continuous Improvement and Strategic Use of Technology
Training and Documentation

- Standard training, user guides and software manuals based on best practices
- Accelerate crew and customer adoption
  - Customized training
  - Customized user guides
  - Crew quick reference guides

Drive Operational Excellence
Custom Reports, Forms and Interfaces

- Customized operations and management reports
  - Based on customer requirements
  - Available in NS
- Custom Forms available for unique data capture challenges and forms management,
  - Delivered within NS and
  - Stored in NS database
- Rapid delivery and competitive pricing
- Custom interfaces to 3rd party applications
Managed Services/Enhanced Support

• Leverage NS technical professionals to help you manage your NS application tasks
• Options include:
  – Daily system administration support
  – Replication monitoring, issue management and resolution
  – Interface monitoring, issues management and resolution
  – Database management
OPTIONS THAT MEET YOUR NEEDS

NS Cloud

- Easy and cost effective option for implementation, deployment and management of NS
- Delivered through Microsoft Azure Platform:
  - Security and privacy are at the heart of Azure and backed by the global resources of Microsoft®
  - EU, US and other regional compliance standards built-in
  - Global network of Microsoft data centers delivers high-performance solutions and deployment options
  - Disaster recovery embedded
  - Bundled NS services deliver a full-service software experience
- Three service tiers available
NS Cloud Service Tiers

Silver
- Hosting
- Disaster Recovery
- Initial Deployment
- One patch upgrade annually
- Microsoft Data Security
- EU Data Privacy compliance

Gold
- Customized proactive system health monitoring including:
  - Replication monitoring
  - Database monitoring
  - Interface monitoring

Platinum
- Customized application services
NS Enterprise

- Complete Marine ERP
- Comprehensive solutions for
  - Asset Management
  - Compliance Management
  - Workforce Management
- Available in the Cloud
- Implement for Success methodology
- Intuitive document-centered design built for mariners
NS Core

- Streamlined version of NS Enterprise
- Used on vessel and/or in office
- Unifies all core operational and compliance activities in a single workspace
- Includes wizards for ease of standard processes
- Available in the Cloud
MODULE ROADMAPS

Vision: To make condition-based predictive maintenance a reality by providing the leading solution that maximizes reliability and uptime for marine and offshore structures and equipment, supporting cost efficiency, regulatory compliance & management controls.

Recently Delivered
- Serialized Items
- Work Order Linking
- Work Order Workflow
- Budget Forecasting
  - Materials Cost
  - Labor Cost
- Hull Manager 3D
  - Hull Condition Measurement
  - Visualization

Near Term
- Drydock
- Streamlined PO process
- Improved Financial Reporting
- Improved Workflow
- Mobile Application
  - Maintenance Completion
  - Inventory Management

Future Plans
- Conditional Scheduling
- Maintenance Threshold Triggers
- Planned Maintenance Adjustment
- Drydock & Hull Integrity Integration
- Onboard Inventory Management

Purchasing

Vision: To facilitate efficient inventory management and informed purchasing decisions, leveraging a full suite of eCommerce tools, supporting the unique ship and shoreside requirements of the marine and offshore industry.

Recently Delivered
- Budget Visibility
- Real time Budget Status
- Alerts
- Over Budget restrictions
- Cost reporting

Near Term
- Catalog and Price Upload
- Contract Renewal & Revision
- Mobile Application
  - Document Approvals
  - Alerts

Future Plans
- Manifesting
- Inventory Reorder Workflow
- Inventory Control
- Inventory Valuation
- Recommended stock levels

Vessel Performance

Vision: To support crew efficiency, maximize vessel performance, and ensure environmental and regulatory compliance.

Recently Delivered
- Operational Data Capture
- Ballast Water Exchange
- Fuel Switching
- Voyage Overview

Near Term
- Web-based Application
- Main Engine Performance
- Automated data Capture
- Environmental Compliance
  - MRV
  - MARPOL V
  - Oil Record Book

Future Plans
- Operational Benchmarking
- SEEMP Guidance
- Route Optimization
- Trim Optimization
- Charter Party Compliance

HSQE & Vetting

**Vision:** To move beyond compliance to a true safety culture with comprehensive linkage to behavior, personnel, documentation, maintenance, management and monitoring.

**Recently Delivered**
- Quality Time Plan
- Configurability by Status
- BBS

**Near Term**
- Enhanced JSA
- Change Management
- Fleet Level Quality Plan
- OCIMF Integration
- Toolbox Talks
- KPIs
- Enhanced reporting

**Future Plans**
- Workflow Configurability
- Advanced Analytical Reporting
- Operational Risk Management
**Vision:** To support crew and crew management efficiency, evolving towards a full maritime HR solution.

**Recently Delivered**
- Rest/Work Hours
  - Graphical view
  - Ability to validate vs multiple authorities
  - Violation reporting
- Crew Scheduler
  - Drag & Drop
  - Increased Filters
  - Multiple Views

**Near Term**
- Hourly Payroll
- Age Related Deductions
- Onboard Crew Kiosk
  - Work/Rest Hours
  - Overtime Entry
  - Performance Appraisals
- Web Portal
- Travel
  - Request Travel
  - Capture Travel Data

**Future Plans**
- Career Management
- Training
- Promotion
- Discipline
- Performance
- Qualifications & Experience
  - Combined Experience
  - Qualifications by Voyage and Customer
