HYBRID QA 4.0 "WIQAS"

HYBRID QA 4.0 Modules

- **01** Administration Module
- **02** Supply Order & Approval Cycle
- **03** Offering Letter and Approval Cycle
- **04** Approval & Feed-back Mechanism
- **05** Alert/ Notifications
- **06** Inspection Module
- **07** Dashboard & Reports Module
- **08** ATE Integration, Remote inspection
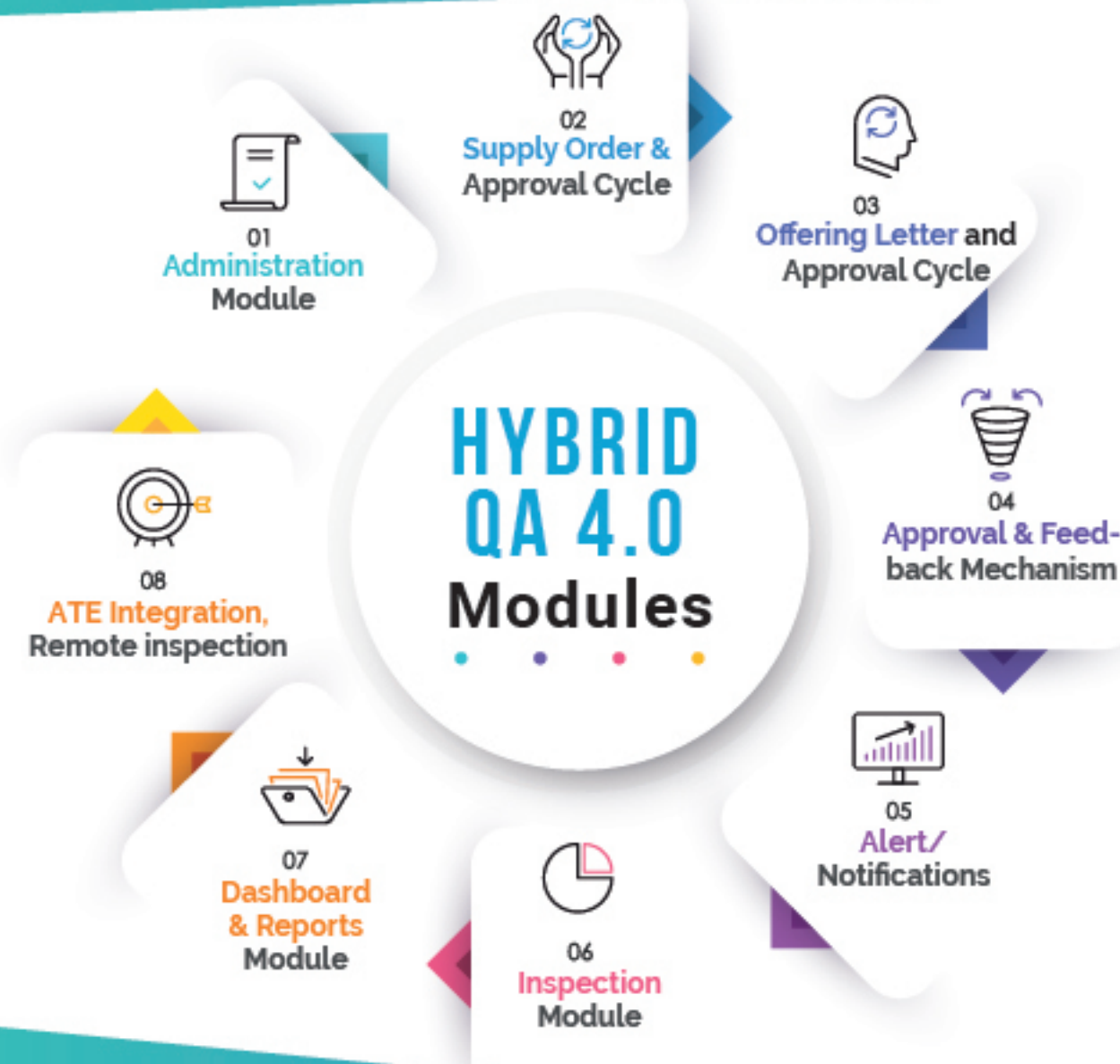
AI & ML Cases

Defect Detection
AI/ML-powered image processing is used to inspect various devices/ components such as barrels, state of the material, text extraction, improving real-time decision-making and reducing failure risks.

01

Automated Testing
Integration with ATE machines for real time data feed, result extraction and analysis and auto sentencing of the reports

02

Improved Image Quality
AI enhances image clarity for better analysis in ATE outputs.

03

Pressure Value Extraction
Automatically extracts pressure values from the gun pressure test display.

04

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HYBRID QA 4.0

"WIQAS"

HYBRID QA 4.0 — An advanced, in-house developed platform designed to streamline and improve Quality Assurance (QA) processes, specifically for the defense sector.

HYBRID QA 4.0 — Integrates cutting-edge technologies, offering seamless connectivity with Automated Test Equipment (ATE), digital inspections, and remote inspection capabilities.

HYBRID QA 4.0 — Simplifies the inspection process from data collection to reporting, ensuring accuracy, efficiency, and consistency in quality control.

Bharat Electronics Limited (BEL) is Navratna PSU under the Ministry of Defence, Government of India, It manufactures state of the art electronics products and systems for Defence and Non defence Domains. Software solutions for these systems are realised using cutting edge tools and technologies at Software Strategic Business Unit.
SOFTWARE SBU with technically competent resources has been developing Software solutions for challenging operational environments. Software SBU is diversified into latest technology domains and also provides Software Assurance Services.

MAKE IN INDIA

"Inspection Excellence for Uncompromising Quality."

CORE INNOVATIONS

Customizable QA Workflows:
Adaptable workflows tailored to specific defense processes.

File Digitization:
All documents and workflows are digitized, eliminating manual handling and reducing processing time.

Remote Inspection:
Live camera feeds and AR/VR support for real-time, remote inspections, reducing travel costs.

Hybrid Infrastructure (Cloud/On-Premises):
Scalable and flexible cloud-based or on-premises solutions, offering cost-effective operations.

Seamless System Integration:
Easy communication between devices and third-party systems, ensuring smooth operations.

Inspection Automation:
Automates inspection processes, improving accuracy and efficiency.

PROJECT RELEVANCE

- Streamlines QA processes
- Digitizing inspection
- Reducing time and cost
- Boosts Efficiency

Real-time Inspection
- Ideal for secure, remote locations
- Remote Inspection

Improves Accuracy
- Integrates automated testing
- Standardized workflows
- Minimizing human error

Enhances Communication
- End-to-end workflow
- Improved Collaboration and transparency

Meets Industry Demands
- Scalable
- Tech-driven QA solution
- Improvement in quality and compliance

Reporting and Analytics
- Automated Reports
- Data Analytics Predictive Insights

PRE PROCESSING STEPS TAKEN

Data Collection
- Existing workflows
- Inspection Reports
- Users' Feedback

Data Cleaning
- Cleaning historical inspection data to remove duplicates, errors, and inconsistencies for accurate analysis and reporting

Data Standardization
- Inspection checklists
- Test procedures
- Reporting formats
- System Integration
- Hardware (IP/USB Camera, ATEs)
- Software Tools

User Training
- Training sessions

Key Functionalities

Digital Inspection
- Standardized checklists
- Real-time data capture
- Improved accuracy & adherence.

Remote Inspection
- Live Camera feed for ensuring Integrity of testing & the testing data.
- Camera with AR/VR support Quick assessments.

ATE Integration
- Automates ATP processes Integration with ATE systems
- Enhances efficiency
- Enables Real-time Business,
- Production & QA Analytics
- Visualizations / customized Dashboards.

Key Benefits

Streamlined QA Processes
HYBRID QA 4.0 ensures faster, more accurate inspections, reducing costs and errors.

Inspection
Ideal for secure, remote locations, ensuring the integrity of testing data.

Enhanced Communication & Collaboration
Improves transparency and coordination between teams for better decision-making.

Meets Industry Standards
Scalable, tech-driven solutions designed to meet defense industry demands.

Predictive Reporting & Analytics
Automated reports and actionable insights for continuous improvement.

Why Choose HYBRID QA 4.0?

Scalable Solution
Suitable for various defense applications, from quality control to compliance.

Increased Efficiency
Automated workflows and integrated systems reduce manual effort and improve speed.

Security
End-to-end encryption and in-house software development ensure robust security.

Industry-Leading Expertise
Developed by defense-sector specialists, HYBRID QA 4.0 is designed to address the unique challenges unique challenges for manufacturing firms, inspection agencies

HYBRID QA 4.0 offers a comprehensive, scalable, and tech-driven QA solution, designed to improve quality, efficiency, and compliance in inspection processes.