

A hand holding a glowing cloud with a network overlay and various icons. The background is dark blue with a network of white lines and nodes. The hand is holding a glowing white cloud. The text is in white and red. The Birlasoft logo is in the bottom right corner. The bottom of the image has a red and white diagonal split.

5G Multi-access

Edge Computing (MEC)

MEC Puts the Cloud in Your Hand

birlasoft

IoT | IIoT | Industry 4.0 | Smart Factory | Asset Tracking | Remote Health Monitoring | Indoor Asset Tracking

Digital Transformation

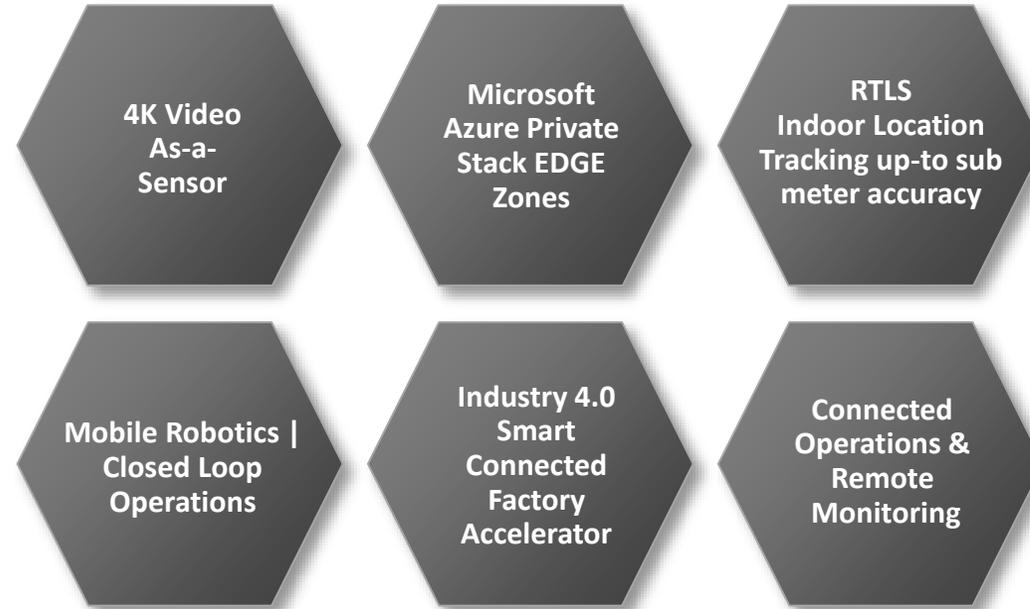


Accelerating your Digital Transformation through next generation experiences driven by Agile, Intelligent, Connected and Efficient offerings and platforms

Digital Themes and Offerings

Experience			Digital Channels
Application Dev & Modernization			APIs & Microservices Architecture
Indoor Asset Tracking			AI & Analytics
Intelligent Automation			Industry 4.0
Digital Factory			IT-OT Integration
Connected Products & Operations			Intelligent Supply Chain
Remote Collaboration & Field Service			Digital Twin
Manufacturing Execution System			Intelligent Enterprise

Jointly Innovating 5G Use cases Together

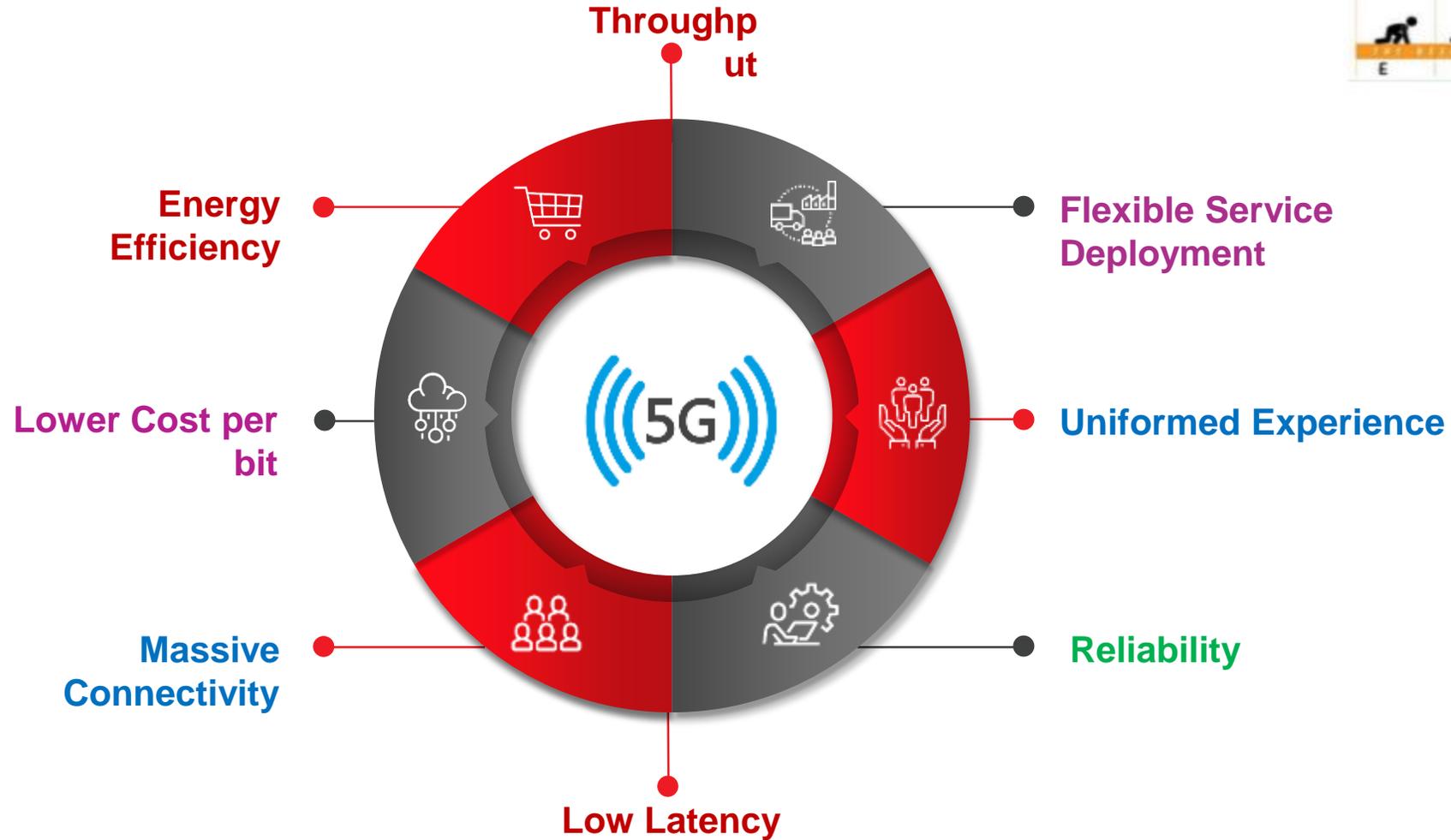
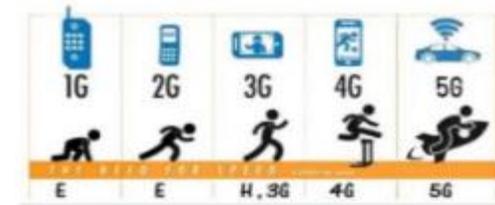


Consulting & Innovation

	Digital Consulting <i>Digital Maturity Matrix, Design Thinking</i>
	Digital Pods <i>Co-innovation and Experience Centers</i>
	Startup Acceleration <i>(Xccelerate 4 Startups)</i>
	Co-innovation with Customers



Why 5G & EDGE..?



75% Enterprise Data Processed at the **EDGE** by 2025 - *Gartner*

5th Generation of Wireless Technology

\$225 Billion worldwide **5G** Revenues by 2025 – *ABI Research*

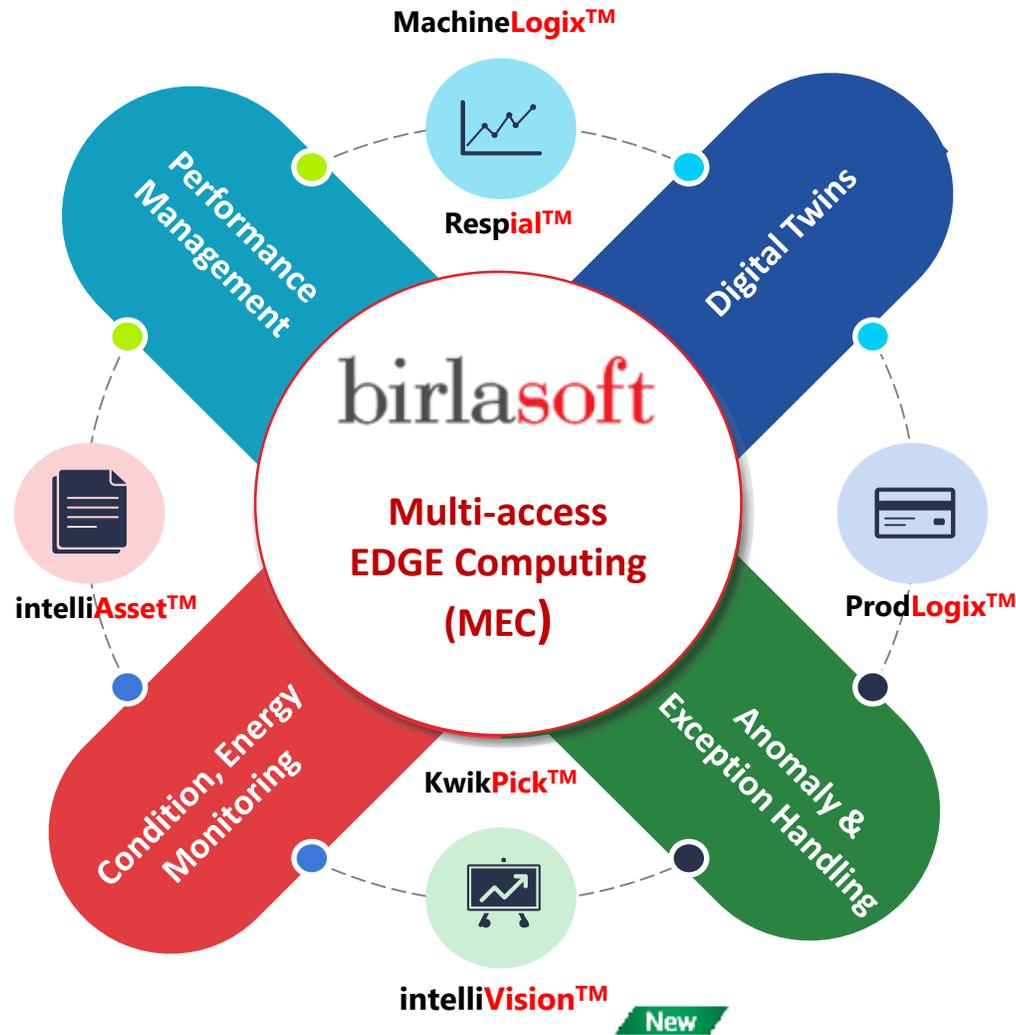
Multiaccess EDGE Computing (MEC) for Smart 'Connected Asset' & 'Factory'

Objectives

- Asset health, Process performance, Quality, WIP Energy consumption intelligence aggregation for **holistic performance insight at Edge**
- **Edge Intelligence for End-to-end supply chain, asset life cycle and product life cycle visibility**, Productivity and cost optimization, Risk management
- **Edge Intelligence for End-to-End traceability** of asset and Product performance for regulatory compliance, diagnostics
- **Edge Level real time decision and informed action** to control Asset\Equipment, Process performance
- Edge Intelligence interface to Digital Twin for **Process Optimization**

Business Impact

- Time to market reduces by 20-50%
- Cost of Production reduction by 10- 30%
- Cost of logistics reduction by 10-30%
- Maintenance cost reduction by 10-40%
- Forecasting accuracy increased to 85%
- Increased IT Security and Reduced IT OPEX cost



Manufacturing Performance

- Real Time KPI monitoring and Performance intelligence
- **Analysis** of Performance, Process, Quality
- Intelligence for Local process **Insights for issue diagnostics and prediction**
- Connecting **Insights** to local decision model to identify optimal actions
- **Action** alerts, notification, recommendation to **edge closed loop**

Quality Performance

- **Evaluating Quality** of product at each stage (Quality features, Material deviation, Scrap, Rework)
- **Correlation analysis** of Inbound, Out bound, In process Quality intelligence for Product **Quality Insights** for Quality Control
- Connecting **Insights** to local decision model to identify optimal inspection, quality control plan

Asset Performance

- **Evaluate Asset condition, status. Generate Alarms** and Alert for Insight actions to Operators and Supervisors
- Integrate EDGE intelligence with **Asset Digital Twin** for Asset value chain process **synchronization and Performance Optimization** (Maintenance Schedule, Assistance, Utilization, Operation plan)
- **Condition Monitoring Alerts** | Alarms & Notifications

Our Services for MEC



Consulting and Advisory

- Exploratory Workshops and Use Case Ideation
- Technology Assessment, and Azure Stack EDGE Platform Demo
- Quick Prototyping and Business Case Preparation



Architecture and Integration

- 5G & Private Lte. Network, Industry Specific Applications and Smart Assets
- Integration with augmented technologies i.e. EDGE Analytics, IoT, Vision AI, and other digital technologies



Innovation & Center of Excellence

- R&D Lab to facilitate our clients to co-ideate, co-experiment, and co-innovate
- Industry specific Proof of Concepts and Point of Views
- Technology Framework and Accelerators

5G Manufacturing

MEC | 5G | Private LTE

AI Based Safety

EDGE Computing

Digital Twins

Machine Vision

Ultra Low Latency



Machine Connectivity & Monitoring



Realtime Location Tracking (RTLS)



Digital Twins | Close Loop Operations



4K Video-as-a-Sensor & AI



AMR's | Cobots & Autonomous Vehicles

CHALLENGES

- Reliable, secure and low latency factory connectivity. Improving productivity & costs.
- Improving worker safety and quality.
- Reduction of repetitive tasks for improved working environment.
- Leveraging data and insights to deliver new business models.
- Enabling real-time decision making and agile production.
- Driving sustainability through improved materials usage etc.

SOLUTION

- Reliable and secure 5G connectivity in industrial environments.
- Realtime quality control and automation.
- Realtime inspection and automation.
- Warehouse automation with AGVs.
- Realtime data driven asset management and analytics.
- Realtime Productivity & Safety Improvement.
- Mixed reality training & assistance

BENEFITS

- 5G delivers 70-80% higher efficiency and usability than Wi-fi & Public LTE.
- Increased output, reduced lead-times and reduced error rate for zero fault production.
- Manual inspection times reduced from days to minutes (98%+). Higher precision detection and automation.
- Reduced headcount per AGV, improved productivity (4x speed).
- Longer maintenance cycles and reduced costs.
- Higher accuracy and placement of machines

5G Energy

MEC | 5G | Private Lte

AI Based Safety

EDGE Computing

Digital Twins

Vision AI

Ultra Low Latency



Remote Monitoring & Predictive Maint.



Realtime Location Tracking (RTLS)



Digital Twins | Smart Grids



4K Video-as-a-Sensor & AI



Fault detection & Maint. utilizing Drones

CHALLENGES

- Secure, resilient and scalable connectivity across Grid & Oil Rig to manage distributed resources
- Understand & predict health of grid to reduce outages (stability)
- Remote real-time diagnostics, assistance and worker safety
- Optimization and prediction of supply and demand (Inc. trading) to maximize energy economics
- Integration across grid to monitor, control and automate functions e2e.

SOLUTION

- Wind farm performance optimization & predictive maintenance.
- Mixed reality training & assistance
- Fault detection utilizing drones, image recognition and streaming analysis for predictive maintenance.
- Evolution towards e2e connectivity across smart grids enabling monitoring, control and automation through cloud applications.

BENEFITS

- Wind turbine efficiency optimized by 1% delivering 4% uplift in revenues.
- Wind turbine preventative maintenance enabling repair vs replacements reducing costs by up to 90%.
- Solar farm fault detection using drones reduces inspection time by 80% (hours vs days)
- Solar farm power loss reduced by 15-20%.
- Remote assistance and predictive maintenance reduces workforce time

5G Healthcare & Medical

MEC | 5G | Private Lte

AI Based Safety

EDGE Computing

Digital Twins

Vision AI

Ultra Low Latency



Remote Patient Monitoring



Virtual Med-Device Management



Digital Twins | Predictive Maintenance



4K Video-as-a-Sensor & AI



Connected Medical Devices

CHALLENGES

- Ageing and growing populations are increasing medical costs outstripping GDP growth.
- Increasing healthcare needs given antibiotic resistance, Covid
- Closure of localized services and increasing reliance on private or mobile services.
- Fragmented patient data records and services delay medical resolutions and experience.
- Need for secure, compliant and readily accessible patient and clinician services.

SOLUTION

- Standardization of the 'data exchange of health information'
- Real-time patient data capture, monitoring & prediction.
- Secure virtual consultations to transform outpatient experience.
- Seamless transfer of large patient data within hospitals e.g. scans.
- State of the future education.
- Image & robotics guided surgery & therapy and collaboration.

BENEFITS

- Secure & compliant exchange of data delivering consumer insights, control and faster medical resolutions.
- Delivering real-time, predictive insights & improving remote care.
- Increasing access to services while enabling patients to stay at home. Reducing 'Did not attends' (DNAs) by 15%. £7m per qtr for NHS.
- Reduce cost of care while improving population health.
- Accelerating learning and providing literal learning vs books

Thank You

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