



Industrial Network Services

Project Lifecycle Services For Industrial Ethernet Systems





Kazio Networks is a network services based company concentrating on the ever growing technology of **Industrial Ethernet** within control systems and factory automation.

The increasing use of Industrial Ethernet creates the need for engineering professionals with relevant skills and experience. Unfortunately, many companies do not have the required resources and skills within this area.

Kazio Networks has the expertise you need to fill that gap. We can help you make calculated technical decisions, increase your ROI, improve productivity, stay compliant and integrate your complex Industrial Network systems within your plant/enterprise.

The loss of network data can be devastating, even more than in business/IT networks.

Continuous informational flow within Industrial Networks is vital. Network problems, delays and downtimes contribute to significant loss in revenue and safety/security-related issues. Network stoppages and delays within your plant are just not an option.



Why us?

Expertise and Experience

Kazio Networks has extensive Applied Systems expertise, research and development of Industrial Network engineering solutions for client automation and manufacturing needs. We have engineering and project experience within the Pharmaceutical, Life Sciences, Food and Beverage, Wastewater, Automotive, Metal/Steel, Power and Energy sectors.

Methodology

Our methodology differentiates us. We have developed standard procedures and processes to fit our service provisions. Although your engineering needs and requirements may change, our organized technical and developmental process does not.

Nothing but Ethernet

We see a huge value to you that we specialize in nothing but Industrial Ethernet. While we have expertise with other Industrial Networks to fully understand the integration of different applications and infrastructures, dealing solely with Industrial Ethernet allows us to be extremely focused and knowledgeable within the area.

Advanced Tools and Techniques

We use the latest industry tools and are constantly refining our advanced techniques. That means delivering the benefits to you as our valued customer and getting more out of your network systems than ever before.

Our Mission

Our mission is to deliver valued Industrial Ethernet network solutions and assistance to you. We thrive on researching and developing network engineering solutions to complex problems while reducing your costs, optimizing production and manufacturing processes.

The Dilemma

When your Industrial Ethernet system fails, production comes to a grinding halt. Unplanned manufacturing downtime can incur significant plant costs and lead to safety/security-related issues to both your product and employees.

You need a network you can count on, yet you need to keep costs down without sacrificing quality or efficiency. The question is: how do you do it?

The Solution

A good, solid network infrastructure guarantees high performance and reliability. Kazio Networks can design, build and maintain that infrastructure for you because that is our area of expertise.

Our solutions will help:

- decrease downtime of your production/factory networks;
- reduce costs of implementation, maintenance and repair;
- improve performance of your networks and infrastructure;
- ensure your industrial networks follow the required specifications and standards;
- leverage and utilize your plant capabilities/ resources in the best way

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Each year businesses lose an average of 3.6% of their annual revenue in network downtime related incidences. *(Infornetics Research study)*

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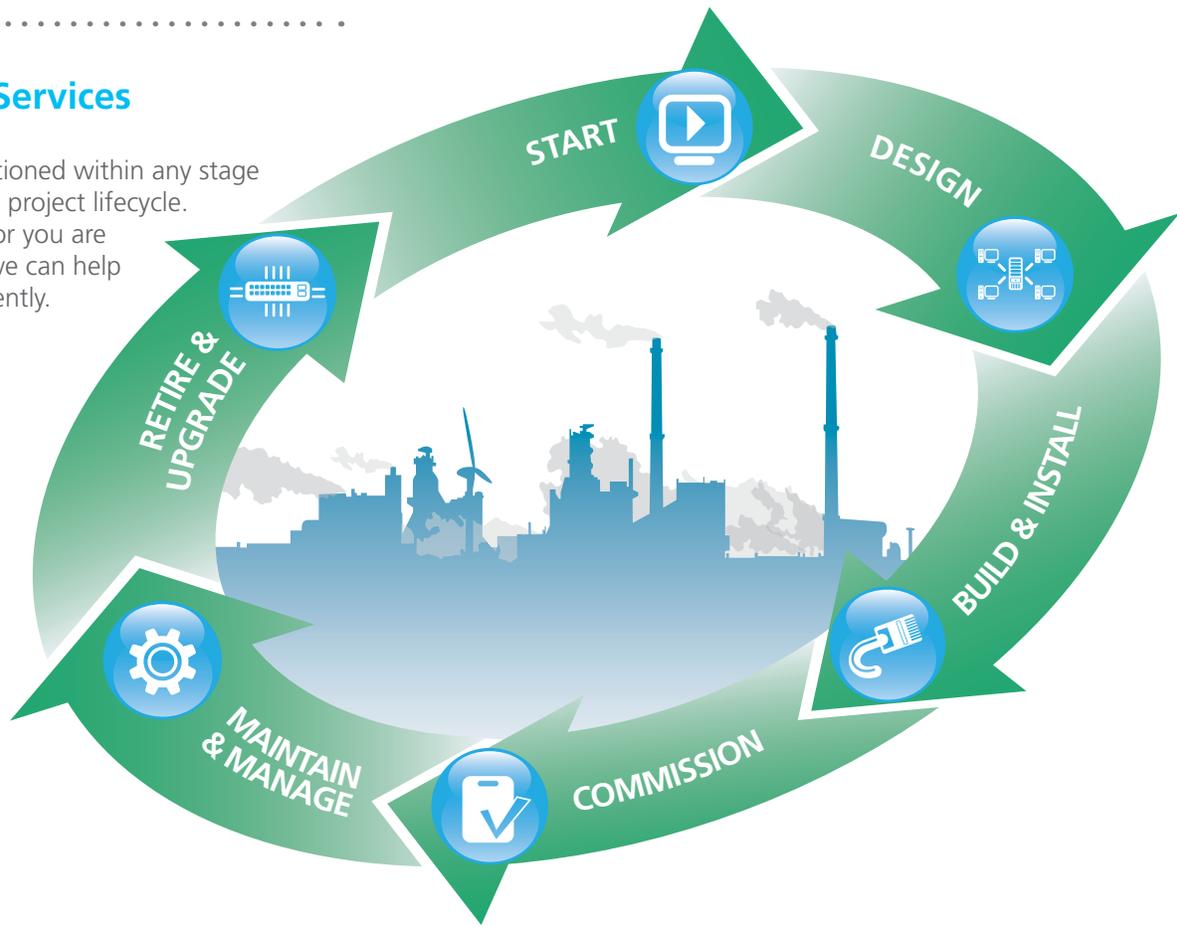
Project Lifecycle Services

Kazio's services are easily positioned within any stage of a typical Industrial Network project lifecycle. Whether it is a new network or you are upgrading to a new system, we can help you make the transition efficiently.

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The average cost of downtime for a large company is \$1400 per minute or \$84,000 per hour. *(Oracle Survey/IDC Study)*

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Here are typical situations of how we can mitigate risk, solve issues, and ensure that you get the most out of your industrial network system investment.

Issue/ Risk	Kazio Networks solution
Migration <ul style="list-style-type: none"> • Moving from a legacy to a new industrial network • Performance justification, security, costs analysis, and more 	Custom/ Turnkey network design & engineering services
Expansion <ul style="list-style-type: none"> • Network capacity expansion • Discovering your exact logical/ physical network layout and how the data is facilitated • Making sure you have enough data to make an informed business decision 	Network evaluation and assessment services Baseline & benchmarking services Asset management services
Problem prevention <ul style="list-style-type: none"> • Preventing network performance problems, future intermittent problems 	Verification and network analysis services
Remediation <ul style="list-style-type: none"> • Finding the source of a network problem • Experiencing unplanned downtime, poor performance, and sluggish networks 	Verification and network analysis services Network troubleshooting services (active/ inactive)
Protection <ul style="list-style-type: none"> • Ensuring that your network system is performing optimally • Ensuring that contractors install the network per the required specifications given 	Verification and network analysis services Network troubleshooting services (active/ inactive) Network evaluation and assessment services

❖ Network Design

Kazio Networks provides turnkey network design expertise to build, reengineer or modify your network infrastructure. We can help you create an optimal network architecture of Industrial Networks and integrate it with business/IT systems.

New Design and Reengineering

Kazio Networks' engineers can help plan and create your Industrial Network infrastructure to fit your requirements, goals, objectives and within optimal industrial standards.

Specifications may include:

- Logical and physical topologies
- Hardware and software recommendations
- Media recommendations
- Infrastructure verifications
- Calculated performance analysis
- Component configurations
- Component and infrastructure costs
- Return on Investment (ROI) calculations

Infrastructure Design Review

We can provide a professional design review of your existing Industrial Network design plan in accordance to industrial standards and best practices. Your planned network infrastructure will be thoroughly reviewed to ensure that goals, needs and functional requirements are met.

Example areas we look at are:

- Component specifications
- Configurations
- Performance calculations
- Software specifications
- Hardware specifications
- Media

Wireless Design and Review

Industrial wireless networked systems are being used increasingly within plant environments. This is partly due to its ease of installation and signal accessibility within hard-to-reach areas.

We can help you:

- Create an optimized wireless network design and installation plan with safety and security considerations
- Survey your location for optimal wireless component implementation
- Review your existing wireless implementation plan
- Recommend industrial wireless components that would fit your requirements and goals

Our expertise includes 802.11a, 802.11b, 802.11g, 802.15.4-based wireless mesh networking, Bluetooth, and low-power radio networks.

❖ Network Analysis

Troubleshooting, evaluating and testing your Industrial Networks reactively and proactively can help solve intermittent problems (in the short term).

More importantly—and in the long term—network analysis and baselining helps form a foundation to answer the key questions of whether your current (or new) network(s) can accommodate future technologies, migration, new equipment and implementation.

Proactive Analysis

Proactive analysis is normally carried out when the network is in a production state. This is a useful step to anticipate, plan and cater for future needs and functional requirements of your network infrastructure. It eliminates the guess work (and what-if situations) of how your network will run in an actual production state.

Some examples of proactive analysis we have done in the past are network load tests, stress test analysis, lab simulations and calculated measurement tests.

Reactive Analysis

This is normally done when your network is not working correctly and when the root problem must be found. It will not disrupt the network and can be done while the network is operational.

Baseline Analysis

Taking a snapshot of your network, its current operating and physical state allows you to measure it against future additions, changes and modifications. It provides a basis for further cost/infrastructure decisions and your Industrial Network system roadmap.

❖ Network Maintenance

Kazio Networks can assist in keeping your networks installed, operational and aligned with TIA/EIA, ODVA, IEEE, ISA and other Industrial Network standards. It allows for corrective and preventive measures within your network.

On-site Diagnostics

We offer on-site network diagnostics of your Industrial Networks. On-site diagnostics are useful to:

- Identify your Industrial Network problems
- Troubleshoot intermittent or random occurrences
- Recommend corrective actions to minimize downtime

Media Verification

About 70–90% of network trouble has been traced to media and its physical topology.

The best software and network equipment available would not be able to function properly with an incorrectly installed Industrial Network.

Our engineers can verify your network according to Industrial standards and best practices.

Example areas we verify:

- Network topologies
- Cable/wiring
- Grounding
- Components

❖ Network Management

Kazio Networks is equipped to manage your Industrial Network system using specific processes, techniques and tools.

Performance Management

Performance management keeps the Industrial Network (and its services) monitored and running smoothly. It increases the ability for counter measures and faster response times in case of emergencies/problems.

Performance management allows us to detect, diagnose, remedy and report upon performance issues ensuring that your network performance meets expectations and requirements.

Change Management

Change Management allows us to ensure that all methods and procedures of your Industrial Network infrastructure are standardized for prompt and efficient use.

This may help:

- Minimize the impact of incidents and changes within a controlled environment
- Facilitate efficient and prompt handling of all changes
- Maintain balance between the need for change and the potential impact of changes

We assist in monitoring/recording of changes, assessing impact, costs, benefit and risk of proposed changes, managing and coordinating change implementation of your Industrial Network system.

Inventory Management

Inventory management allows us to document your network infrastructure, keep track of resources in the network and how they are assigned.

Installation/Project Management

Kazio Networks can supervise, document and manage new network installation projects from start to finish.

❖ Qualification & Validation

Industrial networked systems that are distributed or integrated are increasingly used within the Life Sciences and Pharmaceutical industry.

With that, these systems must be qualified and validated to demonstrate that they are suitable for intended use.

Currently, official FDA documents on validation do not specifically mention network systems. However, there has been increasing evidence that the FDA is looking more and more into such systems (demonstrated through warning letters and inspectional observation reports).

Network systems should not be solely validated for compliance reasons only but for business reasons as well. Network failures, production delays, missing data and lost batch records within a laboratory informational database or electronic batch system can prove disastrous and/or fatal.

Validation and qualification of an Industrial Network system requires good understanding of a network infrastructure, its dataflow and its components. That is where we can help you.

Utilizing GxP guidelines (i.e., cGMP [current Good Manufacturing Practice], GAMP [Good Automated Manufacturing Practice] and the standard 4Q model approach), we can help you:

- Write your validation plan
- Assess your vendors
- Qualify your Industrial Network systems
- Validate your Industrial Network systems

❖ Consulting

Tailored to your business/production goals and at any stage of your project lifecycle, Kazio Networks can assist with:

- Industrial technology research and recommendations
- Customized training
- Industrial Network system and infrastructure security
- Integration with business/IT networks
- Embedded network engineering

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The average network crashes 20 times per year, 70% of the time due to inferior cabling systems.
(LAN Technology)
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