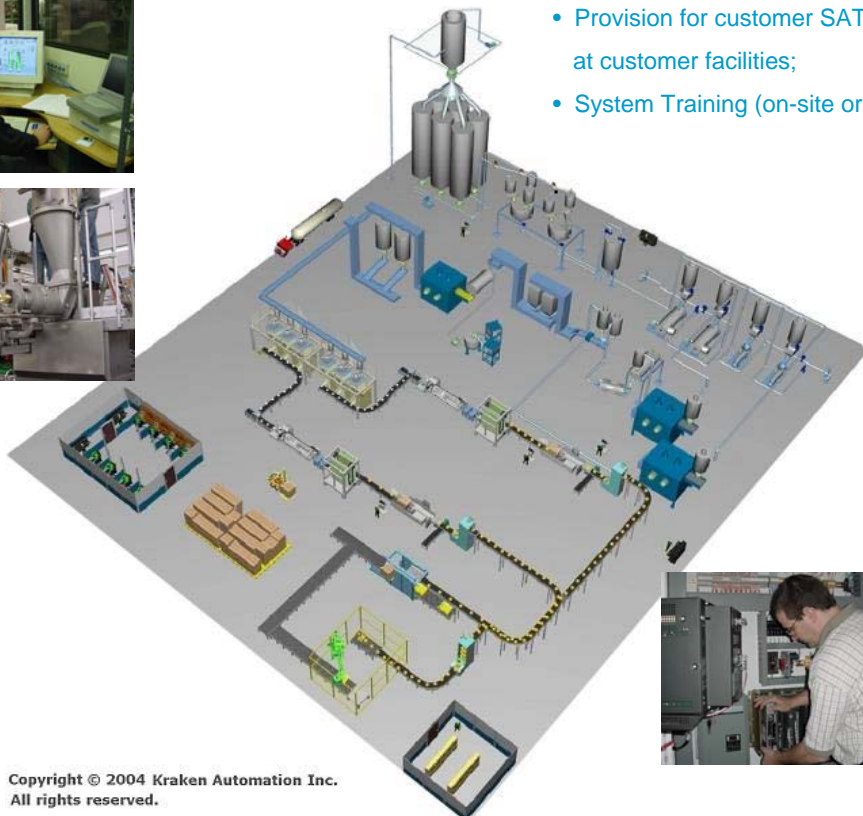


KRAKEN System Integration Services

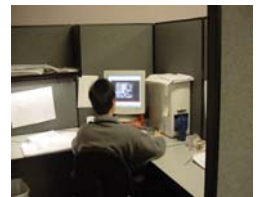
For project sizes small to large, Kraken Automation's system integration offerings always "fit the bill".

One of the most complex automated systems is the human body, comprised of a number of key biological organs, each charged with a specific function. Yet without a coordinated control system provided by the brain, the effectiveness of each component is lost. So too, with manufacturing process and packaging lines, system integration is the application of intelligence to coordinate individual, stand-alone automated systems to perform optimally as one entity. For over 16 years, Kraken Automation has provided system integration services to a wide range of industries, from food, to chemical and municipal markets.



Kraken can offer a wide selection of services and resources in the area of system integration, namely:

- Comprehensive design, engineering and project management;
- Specification and procurement of all required devices and components;
- Wide range of sub-assembly manufacturers, assessed and approved by Kraken Automaton;
- Dedicated control panel assembly area, with CSA approval;
- Complete mechanical assembly facilities for new or rebuilt processing and/or packaging equipment;
- Programming, HMI/SCADA configuration and business system integration capabilities;
- Provision for customer FAT (Factory Acceptance Test) at Kraken facilities;
- Full site installation and commissioning capabilities;
- Provision for customer SAT (Site Acceptance Test) at customer facilities;
- System Training (on-site or in classroom sessions);



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Dry/Liquid Storage and Handling Systems:

Complete system integration relating to dry/liquid storage and handling systems. These typically cover bulk unloading (from rail car, truck or bulk bag), bulk or day system dry/liquid transfer (dilute, semi dense with air assist, dense phase conveying), product handling and conditioning (de-lumping, grinding, sifting, slaking), and bulk storage/tank farm inventory management.

Dry/Liquid Batching Systems:

Experiences with a variety of batch system configurations, including multi-vessel (major, intermediate and minor ingredient additives) systems, add, loss-in-weight, or hand adds dispensing techniques, and specialized pre, intermediate and post batch procedures (i.e. tank atmospheric purging, pre-heat recirculation, etc.). All Kraken Automation implemented batching systems were controlled using PLCs, weigh controllers with specialized fieldbus communications (i.e. Profibus, DeviceNet, ethernet), localized HMI workstations for production work order selection, execution, materials usage tracking with work in place monitoring, and integration to industrial databases and business systems for work order and material usage transactions.

Cooking/Extrusion Systems:

Implementation of cooking/extrusion processes, complete with cooker/extrusion zone temperature controls, mass flow metering and blending of dry and liquid infeed ingredients, pre-feeding and cooker retention time using weight and blending/auger speed control, and product dye extrusion/cutting control with vision system feedback.

Further Processing Systems:

System integration related to solid/liquid further processing manufacturing, such as product dryer controls (temperature, humidity), liquid slurry preparation and application, cereal puffing processes (gas fired and electric puffing systems with pre-heating), product coating and enrobing with liquid/powder additives by continuous mass flow, in-line color sorting, reclaim/salvage handling and final product distribution from process to packaging lines using vibratory and/or dense phase conveying.

Liquid Processing Systems:

Where liquid homogenization and/or pasteurization is required, Kraken Automation has system integration experience for liquid pasteurization processes, and homogenization systems, including pre-heat circulation modes, heating and cooling exchanger temperature control and retention time regulation.



Engineering Services Innovative Packaging Solutions and Factory Automation Specialists

Packaging Systems:

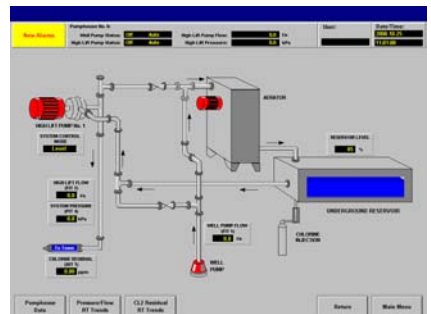
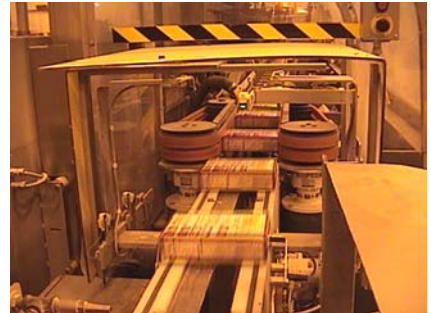
Kraken Automation can provide individual machine or complete packaging line system integration. This includes controls integration from the product weigh scale (multi-head, or batch weighing), premium/coupon dispensing, product bagging systems, high-speed cartoner infeed and transfers, pouching / bagging / cartoning (standard or servo based), metal detection, check weighing, in-line accumulators, case packing, case orientation and palletizing. Where high-speed filling systems are involved, Kraken can provide system integration experience and resources for can depalletizing and single filling systems, high speed filling and seaming synchronization, along with can packing and palletizing.

Water and Wastewater Treatment:

Kraken Automation has a broad range of experience in the water and wastewater industries. For water treatment, this includes raw water pumping control, raw water/settling chemical addition and disinfection, packaged or sand filter control (backwashing, waste control, etc.), finished water chemical treatment and disinfection, high lift pump distribution, with control by system pressure or remote elevated tanks/reservoirs.

For wastewater treatment this includes head works processes (screening, grit removal), primary settling tank controls and chemical addition, primary sludge handling, digester recirculation and digested sludge control, aeration tank systems (dissolved oxygen control with fine/coarse bubble or mechanical aeration), secondary settling tank control (sludge blanket control), return activated and waste sludge control, effluent disinfection, and storm bypass systems.

In either area of treatment, Kraken Automation has provided the required automation and wide area SCADA infrastructure, including leased line and/or radio communication links for single or multi-plant systems.



[Contact us today for more information on how Kraken Automation Inc. can assist you with your Automation Systems Integration requirements.](#)

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