

FRUIT PROCESSING *digital*

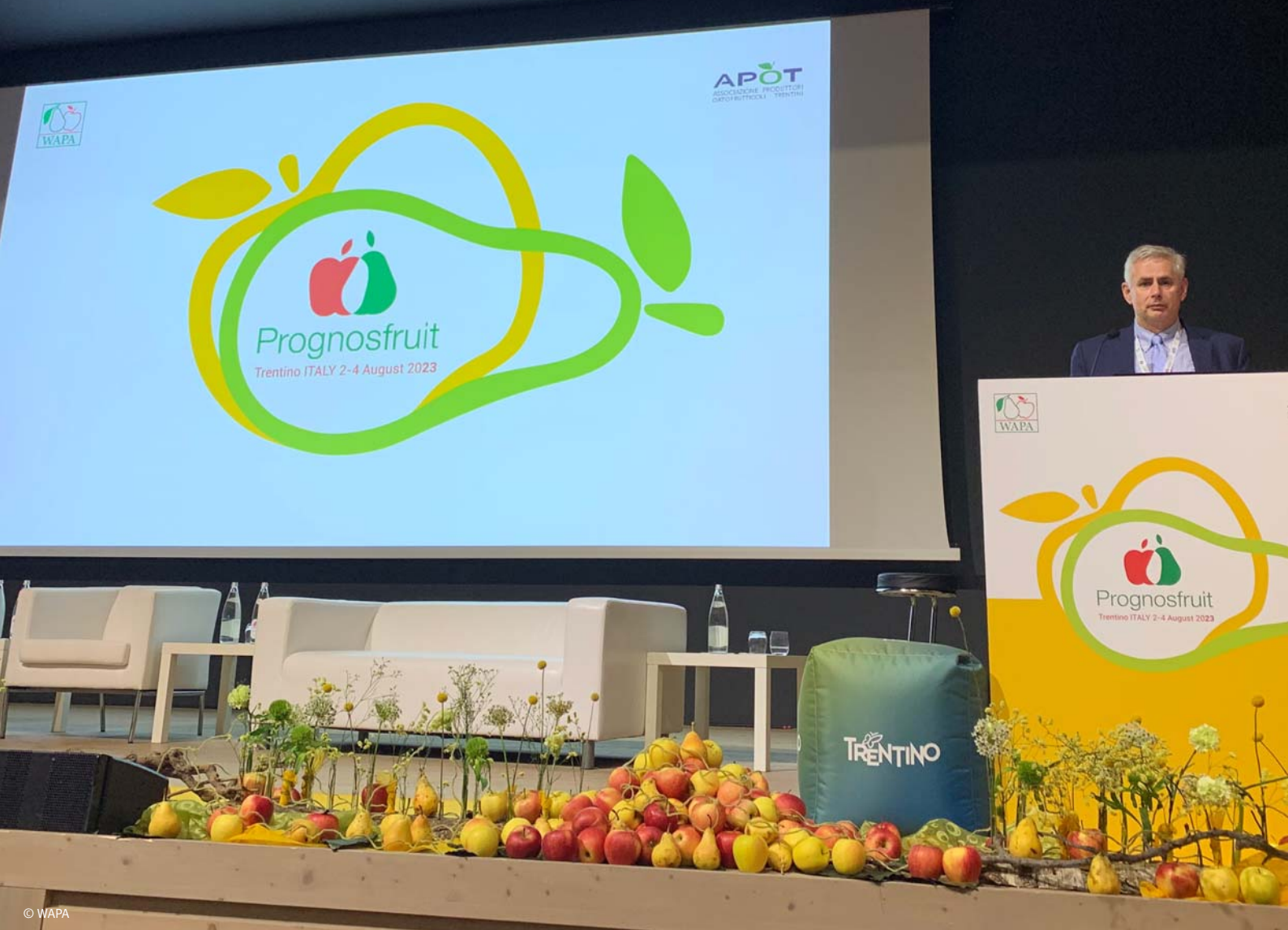
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Events
Flavours & Ingredients
Market Price Report
Markets
Production Reliability
Wireless Networks

AUGUST
8/2023

INTERNATIONAL JOURNAL FOR THE FRUIT PROCESSING, JUICE AND SOFT DRINKS PRODUCING INDUSTRY

PROGNOSFRUIT 2023: first apple and pear crop forecast



Join the BUSINESS CONTACTS directory

then potential customers can find you better

The BUSINESS CONTACTS directory serves as a supplier's register for all those looking for suppliers in specific areas within the fruit beverage industry.

The company directory includes two platforms:

1. BUSINESS CONTACTS print directory
2. BUSINESS CONTACTS online directory – with search function

The collage illustrates the 'BUSINESS CONTACTS' directory in both digital and print formats. The laptop screen shows the online directory's search interface, featuring a map of Europe and a list of companies. The desktop browser view displays a detailed profile for Flottweg SE, including its company profile, products/services, and contact information. The print directory page shows a grid of company listings, such as bawaco gmbh, Bucher Unipektin AG, and Destilla GmbH, each with a small image and key details.

You can choose between a presence in both platforms (the advantage package for comprehensive presence in every FRUIT PROCESSING issue and on www.fruit-processing.com) or just in one.

It is also possible to get a free online entry with basic information.

Would you like to participate?

We will be happy to answer your questions at +49 (0) 2634 9235-16 or advertisement@fruit-processing.com.

Our network is your profit. Advertising pays.

A stack of FRUIT magazine issues is shown, with the top issue titled 'Trends in fruit processing for 2023'. The cover features a vibrant image of various fruits like apples, oranges, and kiwis. The magazine is published by the Fruit Processing Association and is a key resource for industry professionals.

EDITORIAL

Dear Readers,

Prognosfruit 2023 which took place in Trentino, Italy, gathered more than 350 delegates from the apple and pear sector from Europe and beyond. During the first sessions of the conference, the apple and pear crop forecast estimates for the upcoming season were released. In 2023, the apple production in the EU for the top producing countries contributing to the forecast is estimated to decrease by 3,3 % compared to last year. Read more on page 258 ff.

Growing demand for packaged juices, sports drinks, and energy drinks is expected to further fuel demand for drink-flavoured systems. Increasing investment by many multinational manufacturers in flavour enhancement coupled with rising demand for ready-to-eat food and beverages is boosting the global market for flavouring beverages. The preference of consumers for natural flavouring is growing as they are more conscious of their well-being, which is the key driver of market growth. Please have a look at the latest market trends on page 262 ff.

One of the first customers to opt for a machine conversion on one of its two InnoPET Blomax Series III stretch blow molders at its Rogaška Slatina plant in the east of Slovenia is Atlantic Droga Kolinska. In order to safeguard the continuing production of perfect containers in the future, the control unit on the stretch blow molder – now more than 20 years old – was recently replaced. The modernisation was successfully completed in less than a week. Please explore more on page 266 f.

Building a wireless network for a processing facility can be a daunting task. System integrators and network administrators face multiple challenges in ensuring high-throughput, low-latency, reliable, secure and scalable connectivity. One of the many decisions they'll face is where to deploy Wireless Access Points (WAP) or antennas and wireless bridges. Please learn more on page 270 ff.

Yours

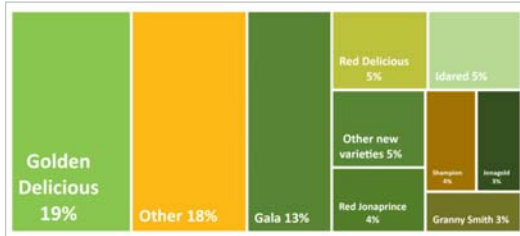


M. Brennich

marco.brennich@fruit-processing.com

EVENTS

PROGNOSFRUIT 2023 – First apple and pear crop forecast released 258



Prognosfruit 2023 concluded its successful return to Trentino, Italy, gathering more than 350 delegates from the apple and pear sector from Europe and beyond. Organized by WAPA in cooperation with APOT (Associazione Produttori Ortofrutticoli Trentini), the 48th edition of the event included the annual conference, where the first apple and pear crop forecast for the Northern Hemisphere was announced, as well as several networking events and visits in Trentino ...

MARKETS

A growing preference for natural flavouring agents over synthetic ones 262

The global beverage flavouring market is estimated to be valued at US\$ 4,756.5 million in 2023. The market is likely to reach a valuation of US\$ 8,204.2 million in 2033 at a CAGR of 5.9 % during the forecast period. The Asia Pacific market is projected to expand significantly due to the rapid growth of the food and beverage market.

Growing demand for packaged juices, sports drinks, and energy drinks is expected to further fuel demand for drink-flavoured systems. Increasing investment by many multinational manufacturers in flavour enhancement coupled with rising demand for ready-to-eat food and beverages is boosting the global market for flavouring beverages ...



IMPRINT

Publisher
Evi BRENNICH

Editorial Office
Editor-in-Chief: Marco BRENNICH
marco.brennich@fruit-processing.com

Advertising
Cornelia HEBBE-LAUB
cornelia.hebbe@fruit-processing.com

Advertisement Rates:
Current price list 2023 on request and at
www.fruit-processing.com

Readers' Service
Christian FRIEDEL
christian.friedel@fruit-processing.com

Subscription Rates
Print Europe: EUR 115 incl. mailing cost
Print Overseas: EUR 124 incl. mailing cost
Digital package: EUR 120
PROfessional package: EUR 175

Cancellation: Written notice one month prior to the end of the subscription period.

Layout
confructa medien GmbH
56587 Oberhonnefeld, Germany

Address for all Communications:
confructa medien GmbH
FRUIT PROCESSING
Westerwaldstrasse 2a
56587 Oberhonnefeld, Germany
phone: +49 (0)2634 9235-0
fax: +49 (0)2634 9235-35
editorial@fruit-processing.com
www.fruit-processing.com

Ownership structure of the shareholders IAW Pressegesetz Rheinland-Pfalz:
Evi Brennich 51 %, Guido Hoffmann 26 %, Lothar Hoffmann 14 %, Hubert Brennich 9 %;
Managing Directors: Marco Brennich (Publishing Management), Christian Friedel (Commercial Management);
HRB 14556 Montabaur

VAT-No. IAW to § 27 UStG: DE813542360

Printed by:
WIRMachenDRUCK GmbH, Mühlbachstr. 7,
71522 Backnang, Germany

Note:
The views and opinions expressed by the authors do not necessarily reflect those of the publisher or the editorial staff.

Original science and research papers will be presented for scrutiny to a member of the Peer Review Board. All manuscripts must be written in English. If English is not the author's primary language, the author should obtain assistance.

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FRUIT is read in 103 countries by more than 16,000 readers per issue.

Publication frequency (print/digital): monthly

© 2023 by confructa medien GmbH,
Westerwaldstrasse 2a, 56587 Oberhonnefeld, Germany

ISSN 0939-4435, Printed in Germany

PRODUCTION RELIABILITY

Boosting efficiency and production reliability. 266

It is the brains of a machine: without a control unit your bottling system can neither mold nor fill your containers. When suppliers notify a discontinuation of such components – such as the control unit on our KHS InnoPET Blomax Series III in the current instance – in the worst case production can grind to a halt. In order to avoid this – and unnecessary costs – the Dortmund engineering company is offering an upgrade for its stretch blow molder. Customers such as Slovenian bottler Atlantic Droga Kolinska are thus profiting from KHS’ holistic services and not only increasing their production reliability but also significantly boosting their efficiency. Proactive installation of the KHS ReDiS remote maintenance system in the course of the conversion also helps to further cut process costs ...



FLAVOURS & INGREDIENTS

Excellent protection: LANXESS wins Just Drinks Excellence Awards 2023 268

LANXESS has won the Just Drinks Excellence Awards 2023 in the categories of “Innovation” and “Product Launches”. The online magazine “Just Drinks” gave the awards to recognize the innovative natural preservative Nagardo and its market launch ...

WIRELESS NETWORKS

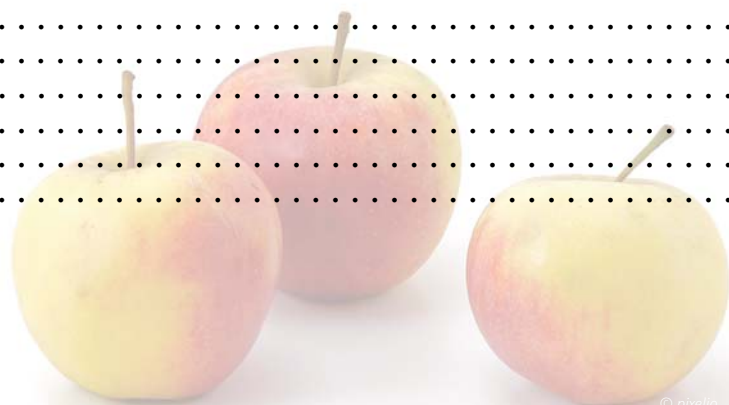
Wireless Solutions for Access Points and Bridges. 270

Building a wireless network for a processing facility, automation assembly plant, manufacturing complex, or other large industrial space can be a daunting task. System integrators and network administrators face multiple challenges in ensuring high-throughput, low-latency, reliable, secure and scalable connectivity. One of the many decisions they’ll face is where to deploy Wireless Access Points (WAP) or antennas and wireless bridges ...



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Wireless Solutions for Access Points and Bridges

| Bridging Technology | WiFi | Wireless Access Points (WAPs) | Wireless Network |

Building a wireless network for a processing facility, automation assembly plant, manufacturing complex, or other large industrial space can be a daunting task. System integrators and network administrators face multiple challenges in ensuring high-throughput, low-latency, reliable, secure and scalable connectivity. One of the many decisions they'll face is where to deploy Wireless Access Points (WAP) or antennas and wireless bridges.

In this article, we address the differences between wireless network bridges and WAPs. “Bridge” is often used interchangeably with “access point (AP)” or with any device that supports network bridging. This can be traced back to multi-purpose wireless devices featuring AP functionality, along with bridging, routing and repeating modes as configurable options. Today, a bridge is not necessarily a device so much as an available function. For instance, Antaira does not sell standalone bridge

devices. Instead, we have integrated bridging capability into our industrial-grade wireless access points to add value to your investment and to simplify connectivity, management and installation for industrial use.

Bridging the knowledge gap for industrial wireless

The distinction between wireless bridging technology and wireless access points technologies is their end goal. A bridge interconnects two physically separate networks or network segments via a wireless signal on OSI Level 2 (the data level), thereby enabling the node-to-node transfer of data between source and destination.

On the other hand, WAPs act as portals where multiple wireless-capable devices — IP cameras, laptops, robots, sensors, Automated Guided Vehicles (AGVs), sensors — gain access to the Internet or an organization's Local



Building a wireless network for a processing facility, automation assembly plant, manufacturing complex, or other large industrial space can be a daunting task. System integrators and network administrators face multiple challenges in ensuring high-throughput, low-latency, reliable, secure and scalable connectivity.

Area Networks (LAN). The WAP connects to a wired router, industrial switch, internet gateway or hub via an Ethernet cable, and projects a wireless signal throughout an office or building. WAPs can also be used to increase the speed, reliability and range of an existing wireless network.

LANs tend to be divided into multiple segments to prevent traffic congestion or interference or for cost or other management, control or security reasons. Those segments must be integrated or “bridged” for traffic to be shared between them. In effect, a network’s wireless bridge creates one aggregate “flat” network from two LAN segments. Any LAN protocol (Ethernet, FDDI, token ring) can be bridged, yet most LANs today are Ethernet-switched LANs, hence most bridges are Ethernet bridges.

How Wireless Bridges Actually Work

So how does a secure wireless bridge function? Basically, it will either block or forward data based on the destination MAC address featured on each data frame. If the software on the bridge believes the destination address is on a network other than that from which the data was received, it can forward the data to the other networks to which it is connected. If the software that the address is not on the other side of the bridge, the data is blocked from passing.

Bridges come in different configurations. The three main types of bridges deployed in today’s networks are:

- Transparent bridges are invisible to other devices on the network, machines that are oblivious to the bridge’s existence. They perform only the function of blocking or forwarding data based on the MAC address. Simple, compact, robust and reliable, transparent bridges are the most common type of bridge.
- Translational bridges convert one networking and control system to control another device by translating the data it receives.
- Source-route bridges are for use on Token Ring networks. Designed by IBM, this bridge makes specific decisions about how the frame should be forwarded through the network. With the diminishing popularity, capabilities, reliability and cost of Token Ring source-route solutions these bridges are not commonly used today.

Going Wireless for Network Bridges

In the not-so-distant past, a network administrator could only connect two network bridge devices with a long Eth-



Antaira Technologies' ARX-7235-AC-PD-T Access Point is designed for industrial and enterprise outdoor wireless access applications.
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ernet cable. Industrial-grade wireless networks now reliably perform the same task without the hassle, installation, maintenance and costs of running Ethernet cables or leasing a line. Instead, wireless bridging quickly connects segments via antennas transmitting Radio Frequency (RF) signals capable of spanning between buildings and machines on the same campus, over long distances, and through walls, to transmit and receive data. Wireless bridge communication is between two transceivers, antennas rather than one emitter broadcasting a signal to multiple receivers. Therefore, wireless bridge links are referred to as point-to-point links.

Also, a wireless bridge’s RF power is not transmitted by positioning the antenna in a 360° coverage pattern. Instead, the RF is purely directional to maximize signal energy, typically between 10 and 20 degrees. Wireless signal energy at full throughput requires that a perfect (or near-perfect) line of sight exists between the two bridge devices. In dense industrial environments, operating at lower frequencies – 2.4 GHz instead of 5 GHz – can help with signal strength since longer wavelengths penetrate obstacles better. In terms of range, a wireless bridge spans distances up to several miles which can be increased by raising the antenna, but not indefinitely, as radio and optical signals attenuate with distance. Latency and bandwidth will vary greatly depending on the bridging wireless technology solution that you choose and your environment, i.e., line of sight, weather, equipment density, and walls.

Obviously, wireless bridging connectivity represents a far more robust and economical alternative to laying cable, especially in hard-to-reach and hazardous industrial locations. Wireless bridging is more convenient for scaling a network, moving network devices, or connecting clients to additional LAN segments. In industrial environments it may also be impractical or even impossible to run long-distance Ethernet cables, leaving wireless connectivity as the only option.

Wi-Fi access points as an industrial wireless solution

Now that we have a better idea of what wireless bridging is, how do wireless access points fit into the network for wireless solutions?

WAPs are primarily designed to form Wireless Local Area Networks (WLANs). In this configuration, a WAP connects to a wired router, switch or hub and then broadcasts a wireless signal throughout a designated area for wireless-capable devices to access. In this way, a WAP acts like a hub, but with wireless technologies so instead of plugging in cables you tune into a wireless signal. WAPs can be installed virtually anywhere an Ethernet cable from a router can reach — mounted on poles, from ceilings to ground, and on walls. WAPs featuring Power over Ethernet will not need to be located near an electrical outlet, giving the system designer more installation flexibility.

In reliable wireless bridge mode, WAPs are excellent for extending the wireless coverage of components of an existing 802.11 network across a longer distance. It can also perform the traditional duties of a bridge, that is, wirelessly interconnect two network segments. Some wireless bridges support only a single point-to-point connection to connect to another AP. Others support point-to-multipoint connections to connect several other APs.

In a point-to-wireless access point industrial to-multipoint version of this application, a single WAP can be physically wired to the network to act as the base station unit. Multiple additional WAPs or “subscribers” are mounted throughout the building. Subscribers link wirelessly to the base station enabling them to propagate a shared network signal over an extended area. Point-to-multipoint technology is ideal where there is a larger cluster of devices that have lower bandwidth requirements. Point-to-point, on the other hand, deploys wireless technology with only two WAPs and is a better solution for higher bandwidth demand environments serving fewer devices. Point-to-point requires WAPs on each side to be physically connected to a router or switch with an Ethernet cable.

WAPs are a security risk. Without security, wireless networks can be accessed by unauthorized users within range of the network’s signal so sensitive information transmitted through the network may be intercepted. This is why Antaira industrial wireless AP/bridge/repeaters offer users multiple security protection options: WiFi Protected Access (WPA), WPA2, WPA3, Remote Access Dial In User Service (RADIUS), and Wires Equivalent Privacy (WEP). These various protection features do not take the place of the fundamental wireless internet security responsibilities of all users, such as guarding and frequently changing passwords.

Industrial applications that utilize wireless APs and bridges

- **Industrial Automation:** Wireless access points and bridges are commonly used in industrial automation systems to provide a wireless connection between sensors, controllers, and other devices. This allows for the seamless integration of different components and provides real-time data and control capabilities.
- **Logistics and Warehousing:** In large logistics and warehousing facilities, wireless access points and bridges can be used to provide connectivity between inventory tracking systems, handheld devices, and other equipment. This helps to streamline operations and improve productivity.
- **Manufacturing:** Wireless access points and bridges can be used in manufacturing plants to connect machines and other equipment to a central control system. This allows for remote monitoring and control, reducing downtime and improving efficiency.
- **Oil and Gas:** In the oil and gas industry, wireless access points and bridges can be used to provide connectivity between remote monitoring stations and central control systems. This helps to improve safety, reduce downtime, and increase efficiency.
- **Agriculture:** Wireless access points and bridges are increasingly being used in agriculture to provide connectivity between sensors, drones, and other equipment. This helps farmers to monitor crop health, optimize irrigation, and improve yields.



Author:
Henry Martel, Field Applications Engineer, Antaira Technologies
www.antaira.com

The Publication for Practitioners!

The production of apple juice is a carefully engineered sequence of technological measures aimed at extracting the valuable, flavoursome, enjoyable and desired contents from apples and presenting them to the consumer in the very best packaging.

With this book, up-to-date information is now available to practitioners keen to learn what's new in the increasingly automated production. The book sheds light on the back-ground to modern apple juice technology without delving too deeply into scientific detail.

This book is intended to be of service to school and college students, skilled and master craftsmen and engineers.

It will help to answer the many questions about "How does that work?", "Is there an alternative to this method?" and "Can I do something better in my operation?".

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ISBN 978-3-9808682-3-5

108 pages, A4 format, paperback

Please contact Christian Friedel:

books@fruit-processing.com · phone +49 (0) 2634 9235-15 · fax +49 (0) 2634 9235-35

published by
confructa medien GmbH
publishing · college
Westerwaldstrasse 2a
D-56587 Oberhonnefeld/Germany

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+49 (0) 2634 9235-15
christian.friedel@fruit-processing.com
www.fruit-processing.com

