



AFRICAN GRAIN TRADE SUMMIT

Innovations in the Milling Industry

10th African Grain Trade Summit
Kampala, 5th October 2023

BUHLER

Agenda

Introduction to Bühler

01

Innovations & Trends in Milling

Wheat

Maize

02

Our Solutions

Digitalization

03



Bühler is part of the everyday life of billions of people



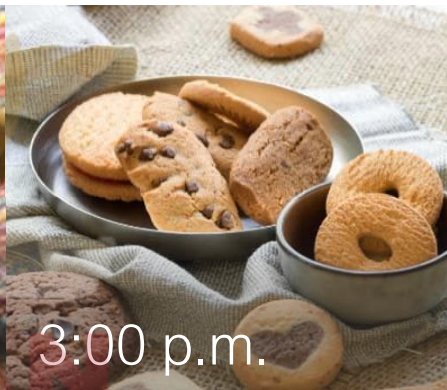
6:30 a.m.



7:15 a.m.



10:00 a.m.



3:00 p.m.



7:00 p.m.



7:00 a.m.



7:30 a.m.



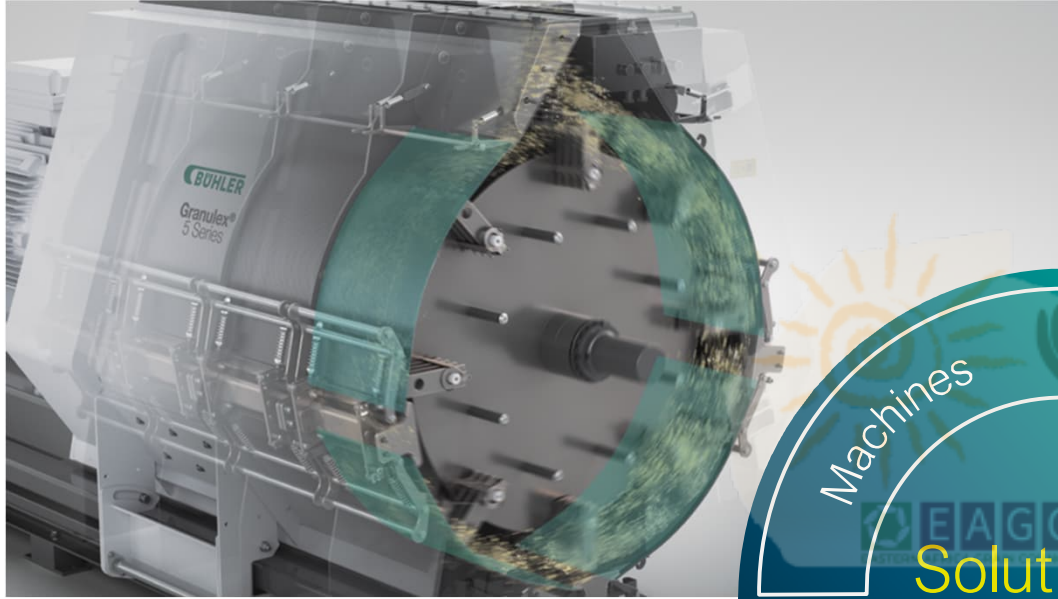
12:00 p.m.



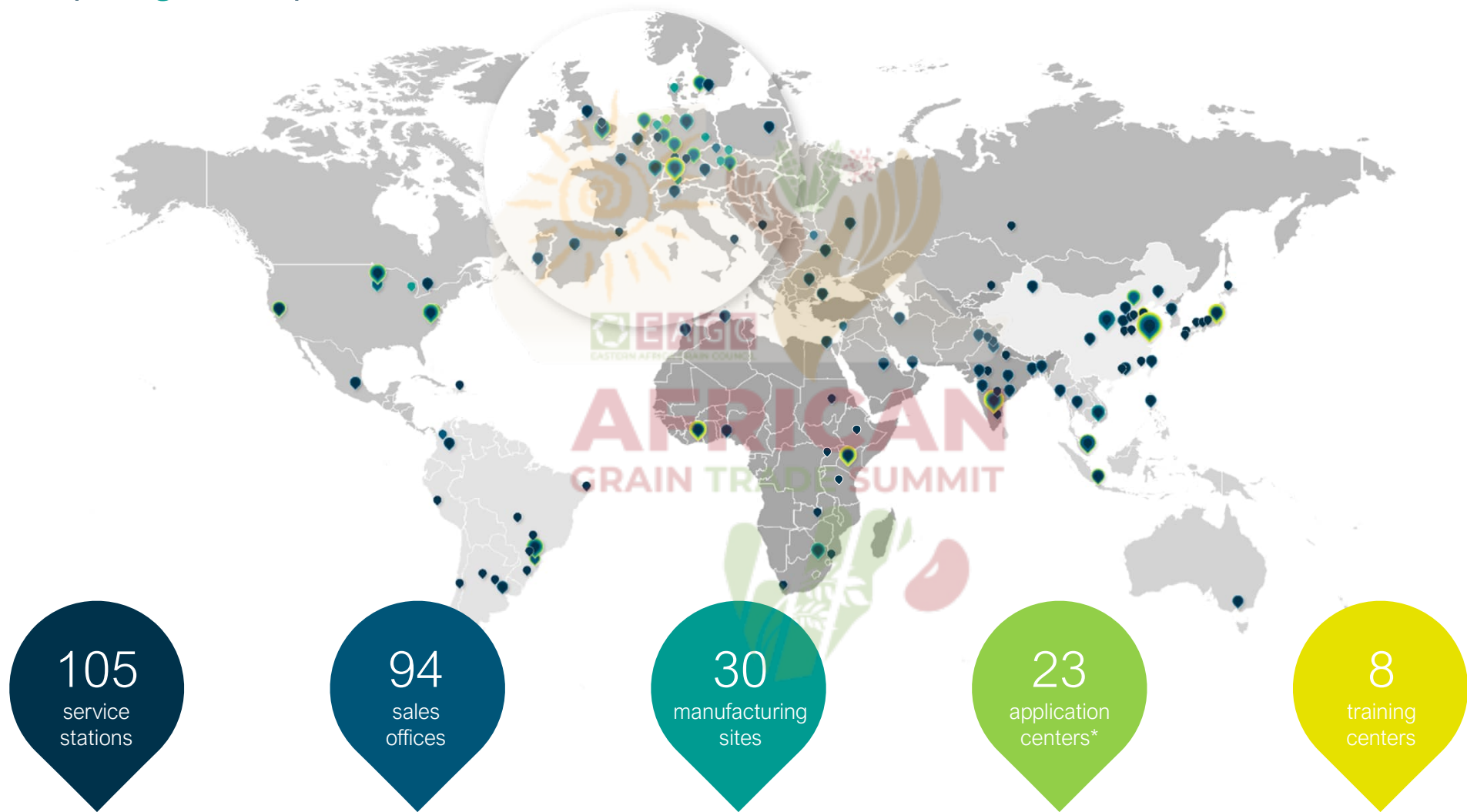
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8:00 p.m.

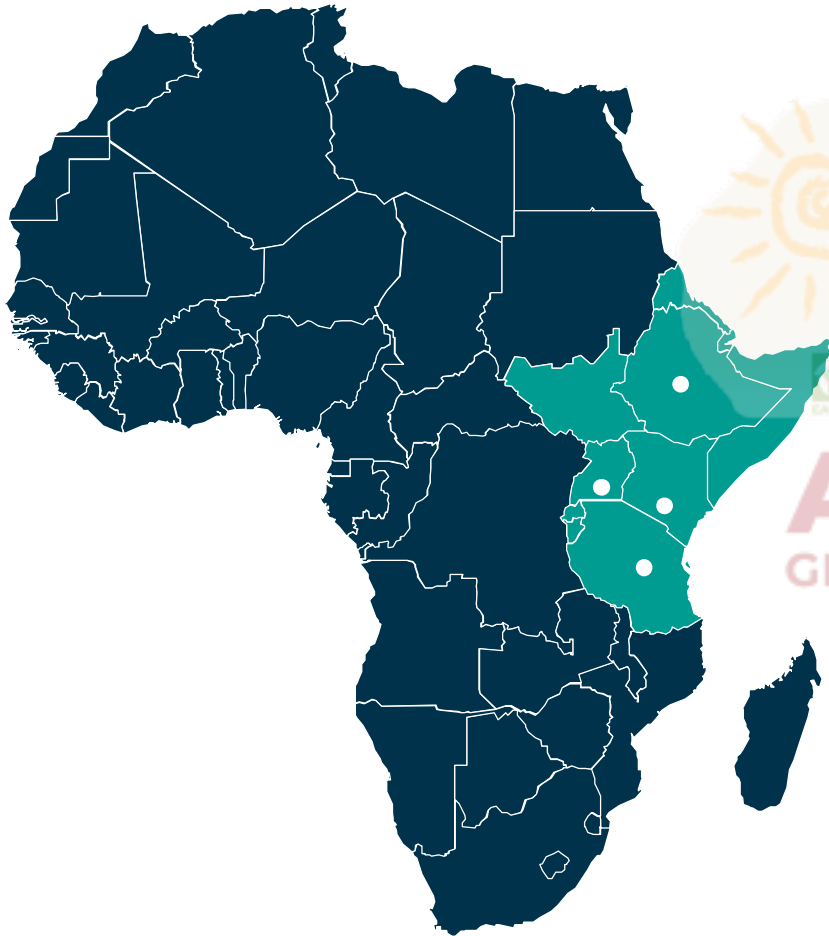


A unique global presence



* Bühler has Application & Training Centers in 23 locations, some of which cover multiple industrial applications.

In the region, for the region



Kenya &
Somalia

Service & Sales Office
Service Workshop
African Milling School

Ethiopia,
Eritrea &
Djibouti

Service & Sales Office

Tanzania

Service & Sales Office

Uganda,
Rwanda,
Burundi &
South Sudan

Service & Sales Office

Industry Trends

- Energy Efficiency
- Smart Mill (increased automation)
- Smaller footprint (compact mill)
- Modular Mill for faster installation
- Integration into cloud services (IoT)
- Environmental sustainability through reduced emissions and resource utilization



Milling Solutions

Mission, Facts & Figures

Our mission:

We develop safe, efficient and intelligent milling solutions for grains & pulses which set the benchmark in our industry.



450M tons wheat
processed with Bühler solutions annually
(750M tons total)



> 420 projects
per year



CHF 680 M.
Turnover



Ø 2'500
Roller mills per Year



1
Milling provider globally

Wheat

We focus on your concerns

- Rising raw material and energy costs
- Digitalization and automation
- Food safety
- War for talent



Wheat

What we do



Wheat/
Rye
kernel

Intake,
pre-cleaning,
Storage

Cleaning and
Conditioning

(Pearling of
Durum)

Milling

Storage &
blending



Heat Treatment

Drying

Mixing

Pellet pressing

Wet separation

Drying

Atta flour

Flour
(Semolina)

Modified flours

Premixes &
ready mixes

Bran

Bran pellets

Various
functional
starch, protein
and fibrous
products



Flatbreads and other traditional
wholewheat baked goods



Baked goods



Pasta



Beverage & desert
thickening agents



Soups &
sauces binders



Infant nutrition
bases



Flour mixes



Instant soups



Plant-based
meat



Animal feed



Starches



Ethanol



Protein

Biorefinery

New solutions

BÜHLER



Roller Mill – Antares Plus

The plus in flour quality and yield.



Antares Plus

Consistent product quality –

- The automatic grinding gap adjustment, integrated with the online particle size measurement (Online PSM MYTA) maintains a consistently optimal grinding action. Particle size deviations are corrected automatically, accurately, and in real time.

Continuously high yields

- Grinding action remains constant at all times, regardless of personnel and raw material quality. Continuous, automatic measurement and regulation guarantee constant high flour productions.

Temperature monitoring with the latest technology –

- roll and bearing temperature monitoring for safe operation.





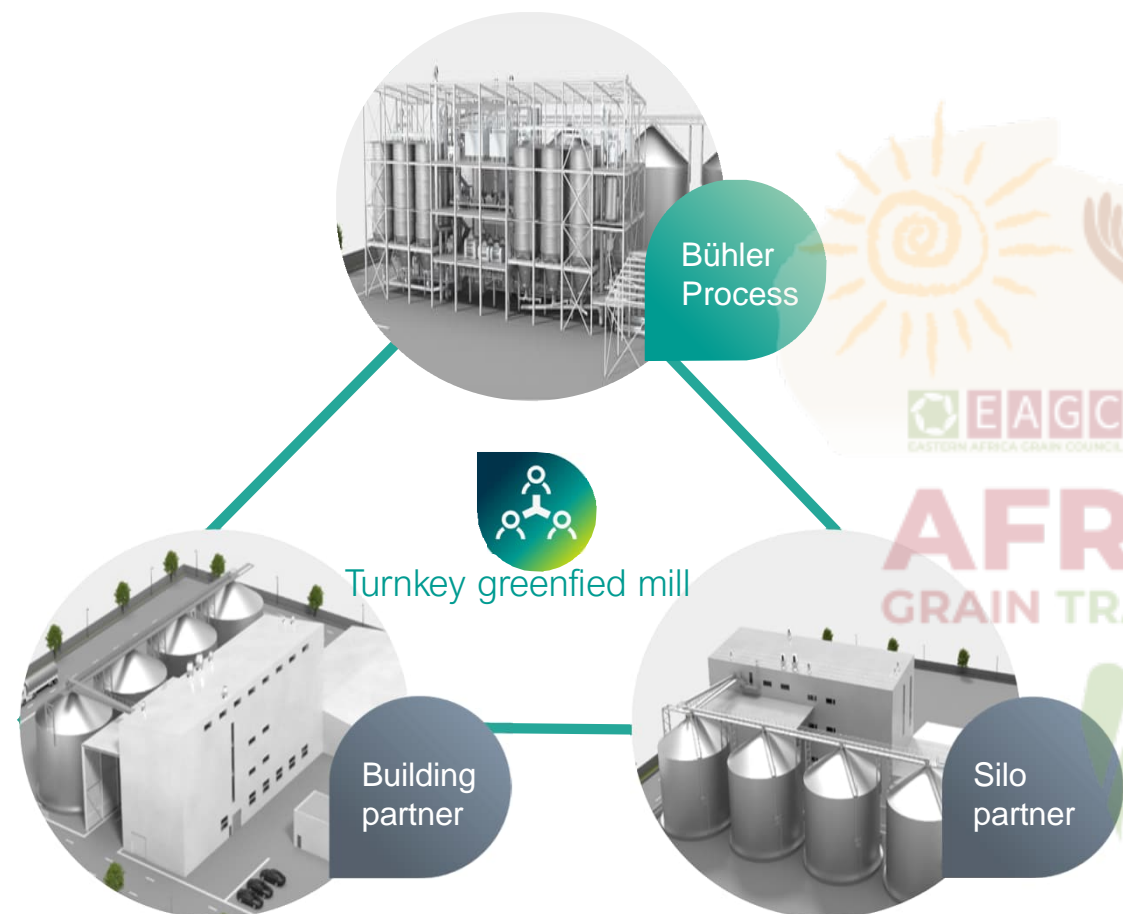
AlPesa™ Milling System

The AlPesa milling system offers flexibility to produce different flour qualities from wheat and sorghum such as traditional whole wheat Atta flour with maximum food safety and authentic taste.

Benefits

- Flexible production of different flour varieties
- High food safety and reliable operation
- Compact design and basic building
- Fast installation and easy operation

EVO – Venture into flour milling with a trusted partner



Bühler's EVO mill

- Turnkey plant with Bühler as major partner
- Pre-engineered concept with selected options
- Partner network for silo and building

Capacity

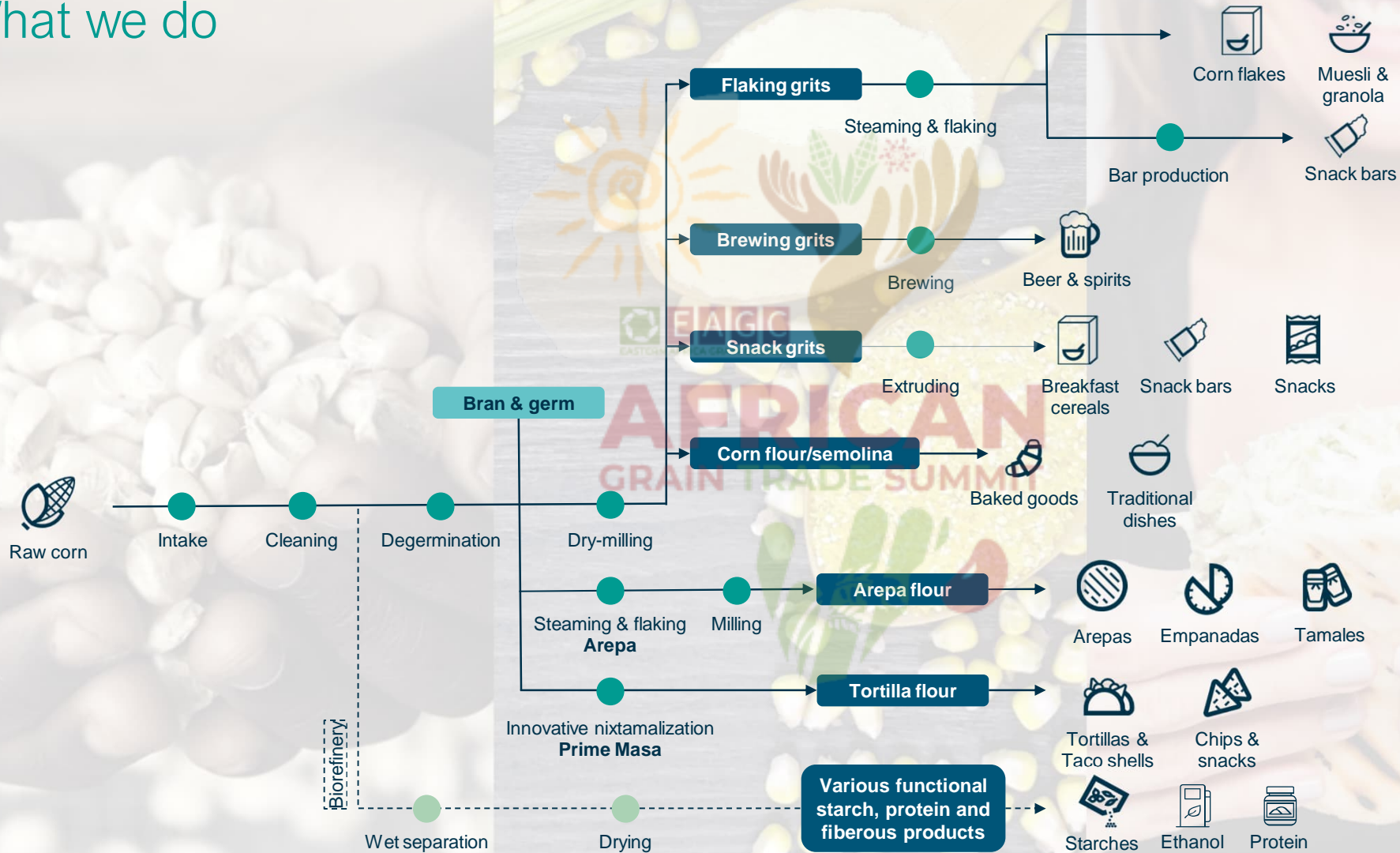
- 1x 300 tpd
- 2x 300 tpd (twin version)

End products

- Based on individual requirements
- Tailored to one or two flour types in combination, semolina optionally

Maize

What we do



New solutions

BUHLER

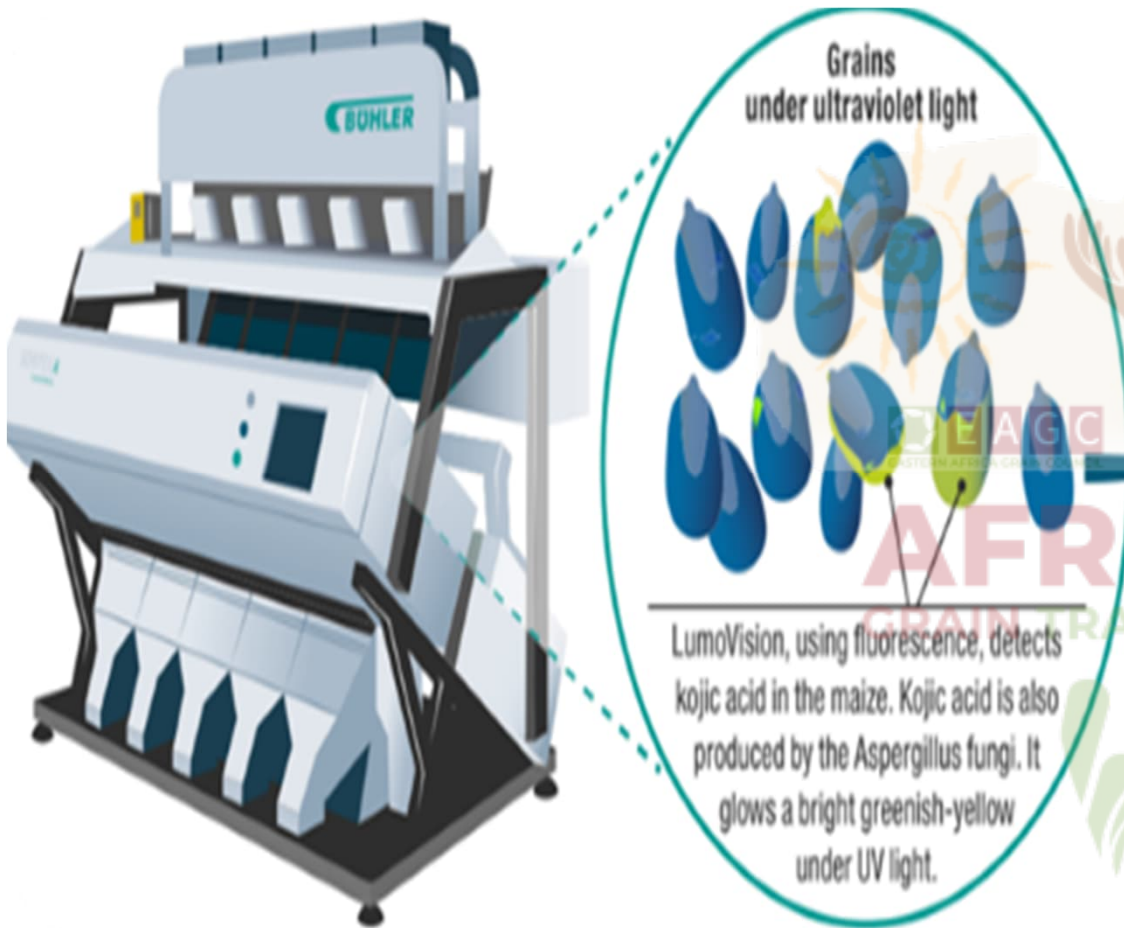


SORTEX A LumoVision™

- LumoVision is a technology for **detecting aflatoxin in maize**.
- Powerful LED based ultraviolet lighting system.
- The product fluoresces under the UV light causing a weak emission of light.
- Highly sensitive LumoVision cameras, specifically designed for this application, look at the colour of the emissions.
- In general, safe product glows blue, contaminated product glows green.

Benefits

- Higher speed: LumoVision processes up to 20 tons of product an hour.
- Higher accuracy: LumoVision eliminates up to 90% of contamination.
- Higher yield: LumoVision, coupled with the cloud technology from Microsoft, reduces yield loss to below 5%.





Online Particle Size Measurement System

Consistent granulation for an optimized production process



The online particle size measurement system MYTA is suitable for the grain processing industry to measure particle size in real time. In combination with the Antares Plus roller mill deviations of the granulation are recorded and via servomotor the grinding gap is immediately adjusted to the target values.

Benefits

- End products with consistent particle size distribution that is traceable at any time.
- Measuring results are directly comparable with traditional sifting method.
- Minimized yield loss thanks to rapid detection of sieve Ruptures.



NIR Multi Online Analyzer

Consistent granulation for an optimized production process

The NIR Multi Online Analyzer MYRG allows for real-time analysis of raw material and end products at various measuring points. This analysis allows for precise and continuous control of ongoing production. With the latest Bühler NIR technology, one spectrometer evaluates up to 6 different measuring points.

Benefits

- Precise monitoring in real time.
- Reduced costs and lower maintenance.
- Flexible installation and absolute product safety.

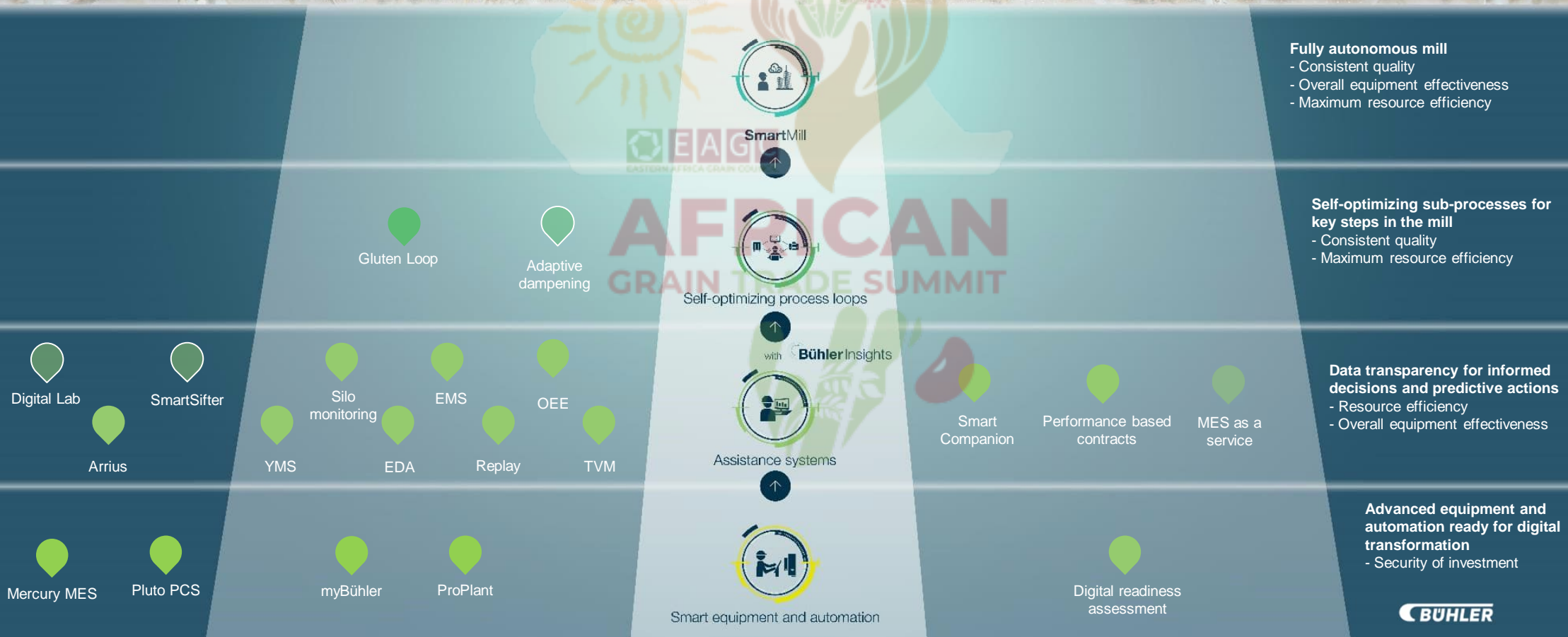
Journey to SmartMill

Solutions

Digital services

Consultancy services

Benefits



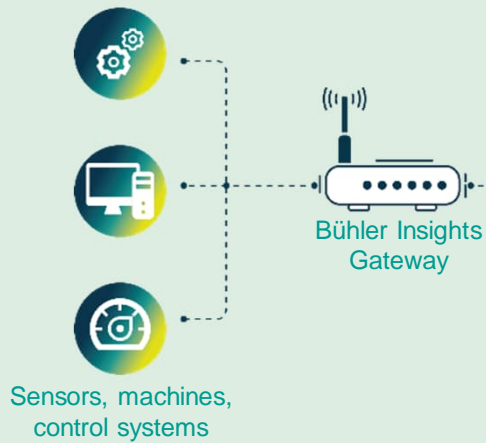


Bühler Insights Get connected

Turn your equipment into
connected devices.

Process and single machine data from:

- Sensors
- Machines
- Control systems



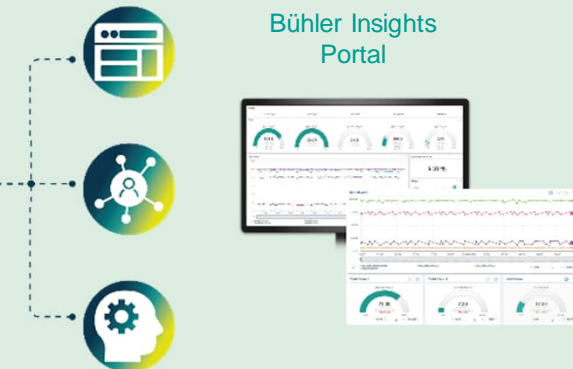
Data storage and processing

- Secure data transfer
- Data storage and processing according to ISO 27001



Data visualization and actionable
insights.

- Customizable dashboards & KPIs
- Benchmarking & recommendations
- Artificial intelligence applications (future)
- Predictive analytics (future)



Wheat and Rye Whitworth – Pioneering the flour milling industry

SmartMill incubator with more than 15'000 data collection points

- Most transparent and consistent process. Energy savings of up to 8% across plant.

Approx. 20% building volume reduction

- Resulting in building investment savings

Installation time reduction of 12'000 hours

- Reduction in costs and lead time of the project



Customer
case #1

Wheat and Rye Al-Hazaa Investment Group – Lighthouse to the entire region

Firstmover in Jordan

- Bühler Insights- latest tools to maintain optimal production efficiency 24/7

Fully automated- from intake to packaging

- Remote mill operation at all times and conditions

Product safety and eco-friendly operations as top priorities

- Low energy consumption, higher efficiency and capacity



Customer
case #2



Error and Downtime Analysis

Reduce downtime and analyze malfunctions

Error and downtime analysis is a digital tool which quickly analyzes how your production equipment is performing.



Higher uptime

EDA provides insights into your production and maintenance. Thus, higher uptime by up to 1% can be achieved.

Fast identification of downtime

EDA provides insights for smart actions and the basis for predictive maintenance and self-improving processes. Thus, downtime can be identified rapidly.

Personalized report

The EDA dashboard offers you a high variety and customized options for data analysis. Trends and benchmarking are just one of them.

Data transparency

Every user has access to the present and historic data. Thus, you can identify potential for improvement and compare different sections, time ranges and plants.

EDA

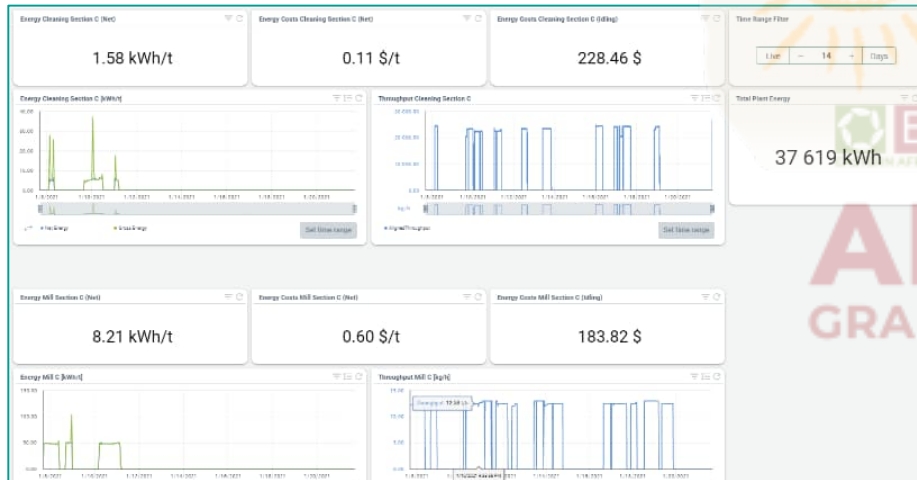




Energy Management System

Decrease energy costs

It is common knowledge that the energy consumption in a mill tends to increase over time, due to various causes. By detecting these changes, our Energy Management System allows you to identify trends and inefficiencies to reduce your consumption.



Lower energy bill

EMS will lower your energy bill by acting based on monitoring and analysis of the energy consumption of your plant.

Precise energy know-how

EMS offers the transparency to understand the energy distribution of your plant. This is crucial when it comes to new investments and plant optimizations.

Plant health monitoring

Generated insights will drive continuous improvements and lay the foundations for predictive maintenance.

EMS





Yield Management System

Improve profitability

The Yield Management System lets you monitor your yield anywhere at any time.



No manual work & no errors

The system automatically collects information from different scales and calculates different yields.

Better yield overview

It facilitates yield overview of millers. The system provides historical as well as present data about the yield in the mill.

High flexibility

YMS provides an ideal solution for every mill. YMS can be installed as a stand-alone solution, on top of a Bühler plant automation as well as a 3rd party automation system.

Data transparency

Every user with access to a particular plant/ mill has the same information available on Bühler Insights.

YMS



CIRCULAR
ECONOMY





Temperature and Vibration Management System

Early detection of improvement potential

The Temperature & Vibration Management is a service measuring the temperature and vibration inside your rolls with continuous analysis by our proprietary algorithms.



Detection of critical operation condition

By detecting critical operation condition early, like over-temperature or high imbalances, you can ensure a safe, reliable and predictable operation.

Constant product quality - low energy

With TVM, you can make sure that your product quality remains constant while minimizing energy consumption, even remotely.

Precise process know-how

TVM offers the chance for the miller to understand the grinding process based on data. This is crucial when it comes to recipe/job optimization.

Data transparency

TVM provides detailed temperature & vibration information to compare your plants and production lines.

TVM





Quality Management System

Early detection of improvement potential

Quality Management System is a Bühler service relying on two powerful platforms, Mercury MES and Bühler Insights, which provide you with the right tools for your daily quality processes.



With the launch of our Quality Management System, we are revolutionizing the quality management process, bringing digitalization and automation to a new level and ultimately saving customers time and money while maintaining the highest standards of quality.

Monitor product quality versus specs anywhere anytime

- Multiple site benchmarking
- Historical data
- Customized dashboards
- All quality specs at a glance
- Alarms in case of deviations



Lower your maintenance costs up to 50% with ProPlant

Preventive Maintenance System

Manage all your preventive maintenance tasks: who needs to do what, when and how, including the right instructions and materials.

Corrective Maintenance System

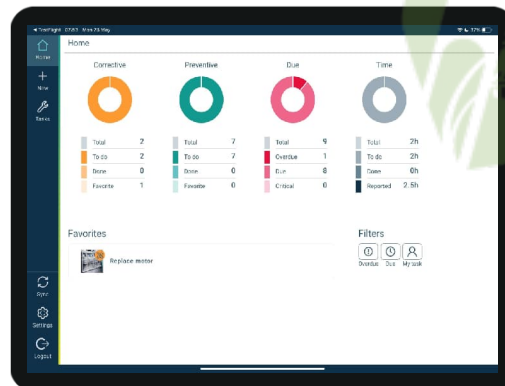
Record and organize corrective maintenance interventions: from discovering and recording the problem to having it solved in timely manner.

Inventory Management System

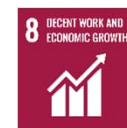
Manage your spare and wear parts inventory in line with the preventive maintenance plan and the expected wear from your operation.

Document Management System

All documentation for all your assets digitally available and accessible. Making the performance of maintenance easy and following the quality requirements.



ProPlant



“Knowledge
is key – when
put into
practice.”





MORE THAN MILLING



Comprehensive theoretical and hands-on practical trainings in the food and feed industry.



Laboratory services for your products.



Trials for your innovative ideas.



Our offering

Our teachers are highly skilled personnel from all over the world equipping you with the right tools and know-how of technology and processing, so you can shape the future of food and feed processing. We offer a variety of classes in different languages.

Topics covered in our classes:

- Energy saving
- Food & Feed safety
- Digitalization
- Preventive maintenance

And many more!




[Check out our courses!](#)


Training in
Wheat & Maize Milling


Training in
Feed Milling


Training in
Coffee Handling & Roasting


Baking Technology & Lab
Analytics


Courses in
Mechanical & Electrical
Maintenance





Experts working for you

- Technological consulting
- Remote support

Get connected for transparent production data:



Installation services

- Installation
- Technological commissioning



Quick and reliable hardware

- Spare & Wear parts
- Tools

Order parts online:



Upgrade your equipment

- Retrofits
- Revisions



Maintenance of your equipment

- Preventive inspection & maintenance services
- Troubleshooting
- Automation services

Use our asset management platform:



Our local skills are here for any of your needs.



AFRICAN

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INNOVATIONS FOR A BETTER WORLD