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Factors to Consider when Managing a Laboratory

To meet new needs and overcome challenges in laboratories worldwide, Eppendorf offers smart lab management software solutions, such as the VisioNize Lab Suite, that increase productivity for all routine tasks in the lab.

There is a rising need for greater sample safety, conformity with increasing compliance pressures, and optimized lab management practices to support a more agile workforce.
The SARS-CoV-2 pandemic has challenged laboratories worldwide to quickly adopt digital technologies to cope with the new norms of social distancing, remote work and restricted access to their lab benches. The last two years have proven that digitalization is central to every interaction – whether on an individual or organizational level – and has fast-tracked the acceptance of digital solutions.
What’s Your Vision for Your Daily Lab Life?

<table>
<thead>
<tr>
<th>Lab Manager</th>
<th>Lab Technician</th>
<th>Quality Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; Efficiency gains and convenience in managing and equipping a lab</td>
<td>&gt; Being informed of device availability: device overview, availability, user</td>
<td>&gt; Reduce efforts for audit preparation</td>
</tr>
<tr>
<td>&gt; Preventing sample loss through enhanced security and traceability</td>
<td>intervention needs, and documentation</td>
<td>&gt; Quality issues due to transfers between different systems and manual steps</td>
</tr>
<tr>
<td>&gt; Cost reductions while increasing productivity</td>
<td>&gt; Reduce manual steps needed to complete an experiment</td>
<td>&gt; Full confidence in quality of work, equipment operations and processes when</td>
</tr>
<tr>
<td>&gt; Minimizing unplanned downtime</td>
<td>&gt; Keep better track of experiments</td>
<td>being audited</td>
</tr>
</tbody>
</table>
Explore the World of VisioNize®

VisioNize Lab Suite is your solution for **effective lab and device management**. Gain access to a modular range of services and decide what works for your lab. These **services integrate** together to **support you and your lab**. The suite of services is kept updated, making it a sustainable investment. As you and your lab expand over time, VisioNize Lab Suite evolves to meet your needs and is designed to **empower you** to focus on your next breakthrough.
Benefits of VisioNize Lab Suite and Services

**Real-Time Monitoring**
Monitor your entire freezer fleet and track device status, parameters (e.g. temperature), and history from anywhere

**Instant Notifications**
Receive alarm and event notifications and quickly address any issues

**Easy Data Access**
Export device and event data, as well as logged user interactions

**Protecting your Samples**
Ensure the safety of your samples 24/7

**Alarm Management**
Track all alarm acknowledgments with time-stamped data logs

**Device Connectivity**
Connect and monitor all your temperature-controlled devices including 3rd party with VisioNize sense monitoring kit*

**Task Management**
Plan and assign device-related maintenance tasks to ensure optimal device performance

**Response-Based Alarm Escalation**
Define escalation schemes to individual or multiple recipient groups based on presence in the lab

*Note: Only available in Europe and North America
Be Confident about Your Sample Safety

What is the cost of a freezer or incubator left open? Can you calculate the value of a year of your work? Don’t get caught off guard in the middle of the night when there is an alarm in your lab. Remotely check your lab device performance whenever you want. VisioNize Lab Suite offers everything you need as a lab manager or scientist to start digitally managing your lab for increased sample security.

> Receive alert notifications via email and SMS text messages for any kind of errors, warning, or device-related events
> Notifications are easy to configure and customizable for each device
> Be notified of different internal errors and alarms for precise decision-making
> Utilize the escalation schemes to reroute alarms to other people in the lab and acknowledge alarms when you are taking action
> Manage and monitor your entire device fleet with VisioNize sense and connect all your temperature-controlled lab devices in one place.
More Peace of Mind

Overview of all connected devices, e.g. freezers and incubators.

Received an alarm notification? Check event history and decide if you need to react!

Monitoring dashboard of a CryoCube® F740hi freezer showing:
> Device status
> Parameters
> History chart
Meet Compliance Needs

Receive support for your audit preparations with VisioNize Lab Suite and eliminate paper-based documentation by switching to one platform for you and your lab.

Support your compliance needs with a precise documentation and export* function of all device-related parameters.

All user interventions, alarms and errors are logged with time-stamped and non-editable record proving device-lifetime performance.
Meet Compliance Needs

Regulatory authorities are encouraging companies operating in pharma and biotech to **demonstrate data integrity.**

<table>
<thead>
<tr>
<th>Timestamp UTC</th>
<th>Timestamp Device Source Time</th>
<th>Severity</th>
<th>Activity User</th>
<th>Device</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021-03-22</td>
<td>14:43:56</td>
<td></td>
<td>Event created</td>
<td>Device Freezer HH CryoCube F740] [Lab Cambridge, Building 8] with ser.no F740FJ000019</td>
<td>Door closed after 0:11 min.</td>
</tr>
<tr>
<td>2021-03-22</td>
<td>14:43:44</td>
<td></td>
<td>Event created</td>
<td>Device Freezer HH CryoCube F740] [Lab Cambridge, Building 8] with ser.no F740FJ000019</td>
<td>Door opened.</td>
</tr>
<tr>
<td>2021-03-22</td>
<td>14:42:45</td>
<td></td>
<td>Event created</td>
<td>Device Freezer HH CryoCube F740] [Lab Cambridge, Building 8] with ser.no F740FJ000019</td>
<td>Door closed after 0:12 min.</td>
</tr>
<tr>
<td>2021-03-22</td>
<td>13:56:34</td>
<td></td>
<td>Event created</td>
<td>Device Generic Device [Lab Panama] with ser.no 1006GI000054</td>
<td>Shaker device HH Innova 40 with serial number “SHAKERem8Lfa” connected</td>
</tr>
<tr>
<td>2021-03-22</td>
<td>13:56:34</td>
<td></td>
<td>Event created</td>
<td>Device Generic Device [Lab Panama] with ser.no 1006GI000054</td>
<td>Shaker device HH Innova 40 with serial number “SHAKERem8Lfa” selected</td>
</tr>
</tbody>
</table>

Logged activities such as user interventions, setpoint changes and performed maintenance tasks with timestamp in an non-editable record.
Manage Your Activities

As lab manager, you are interested in maintaining all the lab equipment to avoid device downtime in order to keep your lab processes going. How great would it be to have one tool to support in managing all lab equipment?

- Check the maintenance status of your device and if you can use the device for your experiment.
- Add customizable tasks and assign them to lab members to effectively manage your lab.
Manage Your Activities

Plan your **upcoming tasks in one tool** and receive reminders when service is due. **Never lose sight** of your device maintenance needs with the VisioNize Lab Suite. All new software updates for VisioNize touch devices, VisioNize box and VisioNize sense are available immediately through VisioNize Lab Suite. Schedule the update based on your convenience and your lab's schedule!
Getting You and Your Lab Connected

Make the right preparations for your digital lab. We recommend checking the following before subscribing to the VisioNize Lab Suite and its services:

1. Check the IT prerequisites for VisioNize Lab Suite with the VisioNize Lab Suite Setup Guide*
2. Check the compatibility of your device by having a look in the VisioNize Lab Suite Device Overview*
3. Check what else is required for connecting your lab devices, e.g., VisioNize box or VisioNize sense

For more guidance and precise planning, contact your local Eppendorf sales representative.

Find helpful tips and tricks to help you navigate your lab through digital transformation here: www.eppendorf.com/visionize

*A list of helpful documents can be found in the back including the links to the documents online.
Whether you are looking for a remote monitoring solution, an alarm or management system or ways to easily access device performance data, VisioNize Lab Suite has all the services to help you build a smart laboratory with increased sample safety, productivity and reliability.

You can easily subscribe online to receive access to the VisioNize Lab Suite: www.eppendorf.com/visionize-subscription
Choose the Plan That Meets Your and Your Labs Needs

For starters:

**VisioNize Lab Suite Essential**
FREE (for first 3 devices)

Gain free, hands-on experience with VisioNize Lab Suite and enjoy a glimpse into the digital, connected lab. The Essentials plan covers all necessary aspects to get started to digitally manage the lab for increased sample safety.

> Real-Time Monitoring
> Email Notification
> Data Access for 7 days
> Device Data Export
> Document Management
> Task Management

*Please note:*
*This plan already includes 3 licenses for connected devices right from the start. Each additional device requires an additional license.*

For more peace of mind:

**VisioNize Lab Suite Sample Safety+**
Price / device / year

Be confident about your sample safety and guarantee smooth operation around the clock with the Sample Safety+ plan.

Enjoy the enriched feature set in VisioNize Lab Suite for more convenience!

> All features of Essentials plan
> SMS Notifications
> Data Access for 1 month
> Response-Based Alarm Escalation
> Audit Trail

*Please note:*
*The price per device license depends on total number of connected devices.*
Connecting Your Laboratory Devices

Connect your lab devices – from freezers to pipettes – to the VisioNize Lab Suite and utilize services such as remote monitoring and device management.

**VisioNize touch enabled**

Devices equipped with the VisioNize touch interface can be connected via Ethernet cable.

**VisioNize box enabled**

Devices that are connectable via VisioNize box (hardware hub) to the VisioNize Lab Suite.

Additional connection hardware, e.g., **VisioNize box** or **VisioNize sense**, might be required. Consult us for precise planning and order placement. A step-by-step guidance is given in the VisioNize Lab Suite Setup Guide*
VisioNize touch enabled devices

VisioNize box enabled devices

VisioNize sense enabled devices (Third party devices)

VisioNize user enabled devices

Mobile devices

Company network

VisioNize Lab Suite

VisioNize sense enabled devices

VisioNize sense enabled
Non-Eppendorf devices such as third party freezers connectable via VisioNize sense, e.g., a temperature and environmental monitoring sensor system.

VisioNize user enabled
Devices that can be added manually to manage and maintain the overall device data, e.g., pipettes or microscopes.

*A list of recommended documents can be found in the back of this brochure including the links to the documents online.*
Connecting Your Freezers to VisioNize Lab Suite

> **Monitor your entire freezer fleet** and **document** all related **device parameters** like temperature and ambient temperature as well as all device interactions, e.g., set-point changes

> **Export parameter and event data**

> **Receive real-time notifications** via email and SMS:

  “Temperature above alarm limit - 60°C”
  “Door open longer than 2:00 min.”
  “Mains power failure. Check power supply to the device.”
Connecting Your Incubators to VisioNize Lab Suite

> Monitor your incubators and track all related device parameters such as temperature, O\textsubscript{2} and CO\textsubscript{2} as well as all device interactions, e.g., set-point changes
> Check if the device can be used for your experiment
> Export parameter and event data

> Receive real-time notifications via email and SMS:
  “Temperature below alarm limit 30 °C”
  “CO\textsubscript{2} pressure below warning level 0.4 bar. Check gas supply.”
  “Long door opening: Close the door.”
Connecting Your Shakers to VisioNize Lab Suite

> **Monitor your shaker runs** and **track all related device parameters** such as temperature, **agitation**, and **remaining runtime** as well as all device interactions like set-point changes
> Check if a device is available for your experiment
> Export parameter and event data

> **Receive real-time notifications** via email and SMS:
  “Program 'pre-culture' has finished.”
  “Temperature below alarm limit 30°C”
  “Door open longer than 5:00 min.”
Connecting Your Cyclers, Mixers and Centrifuges to VisioNize Lab Suite

> Monitor all device-related parameters like temperature and agitation as well as all device interactions like set-point changes
> Check the current status of your experiment or if a device is available
> Export parameter and event data

> Receive real-time notifications via email and SMS:
  “Execution of program ended”
  “Temperature below alarm limit 30°C”
  “Imbalance: imbalance during run”
Managing Further Lab Equipment with VisioNize Lab Suite

Digitize your lab devices based on lab location, serial number, manufacturer, assigned person etc. You can plan maintenance tasks, identify when a device is ready for use and access documents like manuals and certificates for devices from Eppendorf.
Enabling Connectivity with VisioNize® box

The easy-to-install hardware hub connects your VisioNize box enabled devices to the VisioNize Lab Suite.

The hub works as a translation system, enabling data collection of the device data in the platform. The box offers connections for up to four devices depending on the lab infrastructure/device location.

> Connect VisioNize box enabled (Eppendorf) devices like freezers, incubators, shakers, centrifuges and thermomixers
> Monitor all device-related parameters and run statuses
> Have all parameter data ready for export

> Receive notifications for connected devices covering:
  > Parameter alarms
  > Errors
  > Device status changes

Order VisioNize box and additional accessories such as cables via the Eppendorf e-shop or contact your local Eppendorf sales representative.
Enabling Connectivity with VisioNize® sense

VisioNize sense can capture, record and transfer even the smallest changes in your environmental conditions to VisioNize Lab Suite. Use VisioNize sense to monitor your lab rooms, CO2 incubators, fridges or freezers from any supplier.

> Sensors can be used for any kind of temperature-controlled device monitoring (from -90°C to +60°C)
> Configure temperature alarm limits in VNLS and receive notifications via SMS or email.
> All temperature data will be documented for audits
> Use VisioNize sense as an independent (redundant) temperature probe for a fridge or freezer

> The environmental sensor tracks additional parameters, e.g., ambient temperature (-10°C to +59°C), humidity (0 % to 95 %, non-condensing), pressure (700 mbar to 1.200 mbar) and brightness (0 % to 100 %).

Order VisioNize sense and additional accessories such as cables via the Eppendorf e-shop or contact your local Eppendorf sales representative.

Watch the tutorial video and learn how to set up the VisioNize sense sensor monitoring system.

Click here:

How to Install the VisioNize® sense for Remote Device Monitoring
Experience the Digital Lab

The laboratory 4.0 is advancing – and with it the promise of more efficiency, decreased use of resources, and improved sustainability. But is it really that simple?

Have a look by yourself!

Watch video:

Digitalization in the Laboratory with Visionary Technologies from Eppendorf
Experience the VisioNize® Lab Suite

Learn more about the benefits of switching to a connected digital lab. Our specialists will give you insights into each service of the VisioNize Lab Suite.

Join product tour:

Eppendorf Digital Platform - Demo of the VisioNize Lab Suite
Making data simple and accessible has become much easier thanks to increasing digitalization. Laboratories like GeneQuine Biotherapeutics are striving not only for sample security but also seek solutions allowing data access in a flexible way and moreover supporting them to keep their lab running.

Meet Kilian, Co-Founder and CEO sharing his experience using VisioNize Lab Suite.

Watch video:
'VisioNize® Lab Suite adds value to the lab. We have a lot of sensitive samples and it is really important to not waste time on things that should not be problems. VNLS has been great in monitoring our devices enabling users to regulate things from afar.'

Ashmita Jha, Research Assistant, MIT, Boston, United States

'VisioNize® Lab Suite helps us automatically log device data and use it for further purposes. This makes our evaluations extremely robust and our protocolling complete.'

Process Development Drug Substance, CureVac AG, Tübingen, Germany
Facilitating collaboration
Supporting your audit preparations
Improving efficiency
Providing data accessibility
Enhancing sample safety
Everything at a Glance

Get ready to setup the VisioNize Lab Suite:
www.eppendorf.com/visionize-setup-guide

Learn what is required to connect your device:
www.eppendorf.com/visionize-device-overview

Find useful tips & tricks in our Knowledge Base:
www.eppendorf.com/visionize-lab-suite-knowledge-base

Request your personal demo here:
www.eppendorf.com/visionize-demo

Register and manage your subscription online:
www.eppendorf.com/visionize-subscription

Explore all Eppendorf Digital Lab Solutions here:
www.eppendorf.com/digitallabsolutions
Join our upcoming webinars on Eppendorf Lab Channel. Your home for Experts and Knowledge... Live!

www.eppendorf.com/labchannel