Saphyr® ICS v5.3 Release Notes

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TABLE OF CONTENTS

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Revision History

Revision	Notes
A	Initial Release

Overview

This document describes the v5.3 release of Saphyr ICS (Instrument Control Software). In this document, we will provide an overview of changes in this release to best understand the impact of upgrading the instrument control software. Should you have any questions, please contact support@bionanogenomics.com.

Introduction

Saphyr ICS v5.3 is a new release of the instrument control software which operates the Saphyr instrument and interfaces the Bionano Access® webserver for data processing. ICS runs on Windows 10 on the PC supplied with the Saphyr instrument. ICS v5.3 installation is available remotely via Saphyr Assure.

Compatibility

Saphyr ICS v5.3 is compatible with Bionano Access® v1.6.1 and higher.

This software release is compatible with Saphyr Instruments with part number **60325**, **60239, 60375** and **60396.**

ICS v5.3 Feature Highlights

DCAM Error Recovery

The Saphyr camera has an inherent issue that causes sporadic USB device failures that requires an instrument power-cycle to recover. The vendor has made available a camera firmware workaround to detect the failure and support a software reset. ICS v5.3 includes support for the reset and recovery firmware. **THIS IS A WORKAROUND, NOT A RESOLUTION.**

Notes:

1. Reset & recovery is a time-consuming process. Sites with excessive DCAM errors will experience fewer critical crashes but may see diminished throughput / performance. DCAM errors are logged and reported in Assure v1.4. Monitoring allows Customer Support to better support customer sites with excessive DCAM issues.

2. ICS v5.3 recovers from the majority of DCAM errors, but due to the sporadic / unknown nature of the issue, DCAM errors may continue. Monitoring will allow development to incrementally improve the workaround as needed.

3. The camera firmware is installed separately from ICS v5.3 by Bionano Genomics service. ICS v5.3 is compatible with previous camera firmware versions.

DNA Loading – Gen 2 Spike Time

DNA loading spike time for Gen 2 instruments has been updated to 750 milliseconds. Gen 1 instruments remain the same at 1 second. The new time improves DNA loading / throughput in initial scans.

Support for the G3.3 Chip

Continuous improvements in chip and clip design improve user experience, reduce failures, and increase throughput. ICS v5.3 support the latest generation G3.3 chip. The overall layout is identical to the G2.3 chip.

Improved Chip Registration

ICS v5.3 includes new fiducial finding methods that use multi-color illumination and retry logic to improve chip alignment and registration.

Feature List

Category	Description	JIRA Ticket(s)
Workflow	ICS Software will detect and issue a camera reset for most DCAM errors. This functionality requires a firmware update to the instrument camera.	ICX-4217
Workflow	Support Saphyr G3.3 Chip	ICX-4294
Workflow	Improve chip alignment robustness by using multi-color illumination, depending on Saphyr configuration, and retry logic to find fiducials	ICX-4278, ICX-4692, ICX-4235
Access	Add support for future (v1.8+) Access user permissions	ICX-4215
Assure	Report DCAM recovery errors that occur in Basic Acquisition, Chip Registration, Data Acquisition, and DNA loading	ICX-4218, ICX-4219, ICX-4220, ICX-4221
Assure	Support Assure v1.4	Various
Loading	Updated DNA loading spike to 750ms for Gen 2 systems. Previously, the spike time was 1 second. Gen 1 systems are unchanged	ICX-4316
Diagnostic Viewer	Display additional run information including Kiosk Mode, ICS privileges active during the run, Windows user account, number of non-Bionano, Windows accounts with and without Admin privileges	ICX-4232, ICX-4229, ICX-4230
Service / Manufacturing	Added new hardware unit testers for service and manufacturing for laser power and stage alignment / performance hardware.	Various
Logging	Increased on disk retention period for subsystem logs to 30 days. Added logging information to track embedded web navigation.	ICX-4239, ICX-4275

Resolved Issues

Category	Description	JIRA Ticket(s)
Workflow	Saphyr Results folder contains partial archive folders	ICX-4211
Workflow	Add Bundle Heater Status to Instrument Status Icon	ICX-4269
Workflow	Data Administration Error – Unexpected Error while deleting images	ICX-4200
Workflow	Access dropdown menus not showing in kiosk mode	ICX-4182
Workflow	Protocol error while attempting to calculate focus target	ICX-4333
Workflow	Security warning for add chip workflow when using self-signed Access server cert	ICX-4271
Service	Change initial illumination selection in Basic Acquisition to Brightfield	ICX-4224
Service	Improve error message to user when Access Server is in maintenance mode	ICX-4185
Service / Install	Can't install ICS with existing WebView2 installation	ICX-4226

Known Issues

Description
A crash can occur if the USB flash drive is removed while exporting diagnostic files to it. Always wait for the operation to complete before removing the drive.
In Kiosk Mode, if the Saphyr User is locked out of Windows, for example after too many failed logon attempts, rebooting the PC will boot to a black screen. This a security feature to prevent brute force attacks to logon. The logon protection resets after 15 minutes. If this occurs, wait 15 minutes, and reboot the PC.

Technical Assistance

For technical assistance, contact Bionano Genomics Technical Support.

You can retrieve documentation on Bionano products, SDS's, certificates of analysis, frequently asked questions, and other related documents from the Support website or by request through e-mail and telephone.

Type	Contact
Email	**support@bionanogenomics.com**
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