मूल कोशिका विज्ञान एवं पुनर्योजी औषधि संस्थान (ब्रिक-इनस्टेम)
ब्रिक, जैव प्रौद्योगिकी विभाग, विज्ञान एवं प्रौद्योगिकी मंत्रालय, भारत सरकार के अधीन एक स्वायत्त अनुसंधान संस्थान
Institute for Stem Cell Science and Regenerative Medicine (BRIC- inStem)
An Autonomous RI of BRIC, Department of Biotechnology, Ministry of Science & Technology, Govt. of India

DATE: 15.10.2025

CORRIGENDUM-2 TO REF NO: TENDER NOTICE NO.014/2025-2026

TENDER FOR FULLY AUTOMATED ORGANOID DEVELOPMENT AND ANALYSIS PLATFORM THAT COMBINES ADVANCED ROBOTICS, MODULAR INTEGRATION, AND AN IMAGING CYTOMETER FOR HIGH CONTENT IMAGING

Revised Specifications for Turnkey Automation Platform with Imaging Cytometer for 3D Organoid Production and Analysis

The purpose of this tender is to establish a state-of-the-art, fully automated organoid development and analysis platform leveraging advanced robotics, modular integration, and high-content imaging. The automation system should enable low-cost, scalable production of organoids, while supporting the development of novel organoid models and high-throughput screening assays

This automation platform will facilitate:

- Standardized and reproducible organoid culture, seeding, and maintenance
- Automated media exchanges, compound dosing, and plate handling without manual intervention
- Real-time, high-content imaging and analysis of complex 3D biological systems
- Scalability to support both routine workflows and new assay development
- Enhanced efficiency and throughput for phenotypic screening and drug discovery

The workstation must incorporate a multi-deck (main, middle, lower) architecture to house and integrate diverse instrumentation including liquid handlers, incubators, plate lid handler, centrifuges, imaging systems, cell counters, and barcode readers. A track-mounted robotic arm must be deployed for seamless plate transfers across decks and subsystems, enabling uninterrupted workflow execution.

The proposed system will serve as a central infrastructure for advanced 3D biology applications, and must be capable of supporting long-term organoid culture, flexible assay development, and regulatory-compliant data analysis.

Sl. No.	For	Read
1	Workstation Module The main workstation module should consist of: • Main workstation frame with closed bottom cabinets to neatly house PCs, controllers and reagent/waste bottles under the worktable. • Central power panel for 3 phase mains connection with mains switch, accessible fuses and central E-Stop • Workstation control unit "ECU" with 24V supply, input/outputs for optional sensors and two-color status light • Two color system status light • Full enclosure with sliding doors/ hinged doors allowing barrier free access to integrated components, all access doors monitored by safety interlocks, integrated lighting.	Workstation Module The main workstation module should consist of: • Main workstation frame with closed bottom cabinets to neatly house PCs, controllers and reagent/waste bottles under the worktable. • Central power panel for 3 phase mains connection with mains switch, accessible fuses and central E-Stop • Workstation control unit "ECU" with 24V supply, input/outputs for optional sensors and two-color or more status light • Two color or more system status light • Full enclosure with sliding doors/lifting doors/ hinged doors allowing barrier free access to integrated components, all access doors monitored by safety interlocks, integrated lighting
2	Integrated Controlling Software The software should have the following features- •Drag & drop assay method editor, Scheduler plans and executes all plate movement tasks automatically; no need to add plate transportation commands to your workflow. •Highly accurate offline assay simulation for efficient protocol development and optimization. • Comprehensive error recovery with context sensitive response options (Repeat, Continue, Ignore, Finish or Abort). • Scheduler supporting multiple protocols running in parallel or in sequence. • Advanced start options allow protocols to be started at predefined times or triggered by external software. • Labware server providing all plate handling devices (robot, gripper, labware stackers etc.) with the exact dimensions of plates or labware to be handled; no	Integrated Controlling Software The software should have the following features- •Drag & drop assay method editor, Scheduler plans and executes all plate movement tasks automatically; no need to add plate transportation commands to your workflow. •Highly accurate offline assay simulation for efficient protocol development and optimization. • Comprehensive error recovery from system stoppage due to power failure or protocol abort • Scheduler supporting multiple protocols running in parallel or in sequence. • Advanced start options allow protocols to be started at predefined times or triggered by external software. • Labware server providing all plate handling devices (robot, gripper, labware stackers etc.) with the exact dimensions of plates or labware

	need to teach-in new plates or labware • Offline use mode enabling users to continue working with supported devices (liquid handlers, readers etc.) while the rest of the system is carrying out other tasks (e.g. a long-term incubation step) • Build-in scripting feature to integrate external functionality (data processing, report generation etc.) • Error Notification (additional software and on-site IT support for configuration required) • Remote Monitoring (additional hard- and software and on-site IT support for configuration required) • Plate/samples specific parameters or conditions (incubation times, dispense volumes) can be read from worklists. Support for cherry picking, normalization and other tasks relying on external information • Scheduler to support on-the-fly re-scheduling allowing critical parameters to be updated at any time during a run and plate processing to respond to external data or events (results, conditions, LIMS, scripts, ...) • Outlook style "Calendar View" for scheduling software	to be handled; no need to teach-in new plates or labware • Offline use mode enabling users to continue working with supported devices (liquid handlers, readers etc.) while the rest of the system is carrying out other tasks (e.g. a long-term incubation step) • Build-in scripting feature to integrate external functionality (data processing, report generation etc.) • Error Notification (additional software and on-site IT support for configuration required) • Remote Monitoring (additional hard- and software and on-site IT support for configuration required) • Plate/samples specific parameters or conditions (incubation times, dispense volumes, ...) can be read from worklists. Support for cherry picking, normalization and other tasks relying on external information • Scheduler to support on-the-fly re-scheduling allowing critical parameters to be updated at any time during a run and plate processing to respond to external data or events (results, conditions, LIMS, scripts, ...) • Outlook style "Calendar View" for scheduling software
3	Robotic Handling Unit: The integrated workstation should be able to handle fully skirted SBS format plates (with and without lids) as well as other labware (tip boxes etc.) conforming to SBS standard. Information on plates and lids will be stored in the software / labware database and will be made available to all robotic devices. Robotic arm for extended reach • External collaborative, four-axis robot supporting side-by-side human-robot cooperation, build-in servo gripper enabling microplate handling in both landscape	Robotic Handling Unit: The integrated workstation should be able to handle fully skirted SBS format plates (with and without lids) as well as other labware (tip boxes etc.) conforming to SBS standard. Information on plates and lids will be stored in the software / labware database and will be made available to all robotic devices. Robotic arm for extended reach • An external robotic arm capable of transporting plates on and off the liquid handling

	and portrait formats. • Electrical microplate gripper eliminating the need for compressed air source • Plate detection enabled gripper hand detecting the status of the gripper fingers (open/closed) and if a plate/labware is present in the gripper or not • No teaching-in of new plates or labware by users. • For Service purposes, robot teaching through easy-to-use dialogues in scheduling software. • Automatic orientation change of plate if necessary, w/o user instructions	system needs to be supplied. The arm must have sufficient flexibility to move in the horizontal plane allowing interactions with integrated devices. • Electrical microplate gripper eliminating the need for compressed air source • Plate detection enabled gripper hand detecting the status of the gripper fingers (open/closed) and if a plate/labware is present in the gripper or not • No teaching-in of new plates or labware by users. • Robot teaching using general software for service is required • Automatic orientation change of plate if necessary, w/o user instructions
4	Lid handling on the workstation should be vacuum based. Control and scheduling software should ensure that every plate always receives its original lid. Each lid handling position should feature a sensor enabling the system to detect if a lid is present or not. Plate alignment for secure replacement	Lid handling on the workstation is required. Control and scheduling software should ensure that every plate always receives its original lid. Plate alignment for secure replacement
5	Automated Microplate Centrifugation To centrifuge microtiter plates, an automated microplate centrifuge with Microplate loader should be integrated into the integrated workstation: • Top speed: 3000 rpm/1000g • Acceleration / Deceleration: 7.5s 0-3000 rpm • Capacity: 2 Microtiter plates or tube racks (1 microtiter plate or tube rack and 1x counterbalance plate/rack) • Low vibration	Automated Microplate Centrifugation To centrifuge microtiter plates, an automated microplate centrifuge with Microplate loader should be integrated into the integrated workstation: • Top speed: 3000 rpm/1000g • Acceleration / Deceleration: 7.5s 0-3000 rpm • Capacity: 2 Microtiter plates or tube racks (1 microtiter plate or tube rack and 1x counterbalance plate/rack) • Low vibration

6	HEPA Filtration To provide product protection, the platform enclosure should be fitted with a HEPA filtration unit on the liquid handler unit.	HEPA Filtration To provide product protection, the platform enclosure should be fitted with a HEPA filtration unit on the liquid handler unit.
7	Automated Incubator with shaking option • Automated incubator for incubation/storage of cell culture applications • Capable of hands-off to the lab automation robot. The device should be seamlessly integrated with automation. • Wide temperature range available, from 10°C to 50 °C • Controlled humidity with an external water tank with humidity up to 95% r.H. CO2 range of 0-20 Vol. % • Fully automated decontamination routine • Reliable, smooth and precise handling • Plate detection in stackers helps to eliminate labware handling errors. • Precise humidity control without heat extraction and external water tank to avoid contamination. • Tower Shaker for TRUE orbital shaking of applications requiring sample agitation and cells that need to be kept in suspension with Shaker option: 100-1200 rpm, orbital shaking	Automated Incubator with shaking option • Automated incubator for incubation/storage of cell culture applications • Capable of hands-off to the lab automation robot. The device should be seamlessly integrated with automation. • Wide temperature range available, from 10°C to 50 °C • Controlled humidity with an external water tank with humidity up to 95% r.H. CO2 range of 0-20 Vol. % • Fully automated decontamination routine • Reliable, smooth and precise handling • Plate detection in stackers helps to eliminate labware handling errors. • Precise humidity control without heat extraction and external water tank to avoid contamination. • Tower Shaker for TRUE orbital shaking of applications requiring sample agitation and cells that need to be kept in suspension with Shaker option: 100-1200 rpm, orbital shaking

8	Automated Liquid Handling System Flexibility - The instrument software must provide the ability to customize any protocol as per user requirement i.e. open system with more than 20 deck positions. Integrated heating, cooling, and shaker - The instrument should include an inbuilt cooling/heating system, and shaker for 96 well plate. Robotic arms with channels – • Instrument must have an 8 channel dispensing head with each channel independently controlled, and with variable span to process 384 well, 96 well, 48 well, 24 well, 6 well plates, tubes and MCT. • An 8-channel pipetting arm should provide a unique sampling tip design to deliver the benefits of both a fixed washable tip and disposable tip adapter. • Each 8-channel arm must be able to aspirate and dispense 1-1000 µl or better working volume. • The main array gripper can automate plate or tip box movement and access off-deck plates or tip boxes without the need for an additional robotic arm. • The instrument must be with Standard volume 96 Multichannel head to provide 1-200 µl working volume or better. Solution sensing capacity in the reservoir - The instrument should have solution sensing capacity in the reservoir i.e. if the solution reservoir is empty then, the instrument should give a warning. Aspirated volume sensing and accuracy capacity - It is desirable that the instrument should have capacity to measure the aspirated volume. • The instrument must be equipped with integrated grippers for efficient transportation of microplates, microplate lids, and tip boxes. • The instrument must be equipped with a status light indicating standby, operation, user intervention	Automated Liquid Handling System Flexibility - The instrument software must provide the ability to customize any protocol as per user requirement i.e. open system with more than 20 deck positions. Integrated heating, cooling, and shaker - The instrument should include an inbuilt cooling/heating system, and shaker for 96 well plate. Robotic arms with channels – • Instrument must have an 8 channel dispensing head with each channel independently controlled, and with variable span to process 384 well, 96 well, 48 well, 24 well, 6 well plates, tubes and MCT. • An 8-channel pipetting arm should provide a unique sampling tip design to deliver the benefits of both a fixed washable tip and disposable tip adapter. • Each 8-channel arm must be able to aspirate and dispense 1-1000 µl or better working volume. • The main array gripper can automate plate or tip box movement and access off-deck plates or tip boxes with an option for an additional robotic arm. The cost of the additional robotic arm should be included in main offer. • The instrument must be with Standard volume 96 Multichannel head to provide 1-200 µl working volume or better. Solution sensing capacity in the reservoir - The instrument should have solution sensing capacity in the reservoir i.e. if the solution reservoir is empty then, the instrument should give a warning. Aspirated volume sensing and accuracy capacity

	required, and error condition and light patterns. • The provided instrument must have a work surface that can be configured with a variety of passive holders for microplates, reservoirs, and tip boxes. Software • Software should have Application Assistant features, an intuitive user interface and simplified protocol set-up to support users of all levels. • Predefined labware definitions simplify assay set-up and enable labware definitions to remain independent of the position on the instrument. • Performance file library offers optimized pipetting performance and ability to modify pump speeds, air gaps, waste and blowout volumes, and liquid delays. • Comprehensive software should provide real-time status updates to the user and error recovery to ensure sample preservation and data integrity. • Ability to call specific procedures from a single protocol.	- It is desirable that the instrument should have capacity to measure the aspirated volume. • The instrument must be equipped with integrated grippers for efficient transportation of microplates, microplate lids, and tip boxes. • The instrument must be equipped with a status light indicating standby, operation, user intervention required, and error condition and light patterns. • The provided instrument must have a work surface that can be configured with a variety of passive holders for microplates, reservoirs, and tip boxes. Software • Software should have Application Assistant features, an intuitive user interface and simplified protocol set-up to support users of all levels. • Predefined labware definitions simplify assay set-up and enable labware definitions to remain independent of the position on the instrument. • Performance file library offers optimized pipetting performance and ability to modify pump speeds, air gaps, waste and blowout volumes, and liquid delays. • Comprehensive software should provide real-time status updates to the user and error recovery to ensure sample preservation and data integrity. • Ability to call specific procedures from a single protocol.

9	Automated Cell Counter • High Speed Cell Counter equipped with FOMs for AOPI analysis. Brightfield imaging instrument, Fluorescence Optical Platform, Green and Red Channels, Computer controller, USB cable, power supply, pre-installed software for image analysis. • Imaging Performance: should include brightfield imaging, fluorescent imaging, and pattern-recognition software to quickly and accurately decluster, identify, and count individual cells. • Measuring unit should be cells\mL with cell size range of 5 – 80 microns and concentration range of 1.0 x105 – 1.0 x 107 cells/ml • Should include compatibility to common dyes such as AO GFP, PI, PE, APC, JC-1, FITC, CFDA, Calcein AM, RFP, CFP, YFP and 7AAD • Should include Adjustable Protocol Parameters such as Cell size, Cell detection sensitivity, Live cell sensitivity, Noise reduction, Dilution factor, Fluorescence exposure and threshold. • Autofocus – fast autofocus prior to analysis • Count more than 20 samples with fluorescence in 3 minutes or less using a plate-based format • Consumables should be in SBS format and automation compatible • Automation integration ability with optional API • Create growth curves and automatically calculate doubling time • Unified software platform for single-sample and high-throughput instrumentation to simplify training and documentation requirements • Customizable reports – add graphs, images, charts, and tables • Optional 21 CFR part 11 module for compliance with regulatory requirements • Should be pre-validated for cell lines and primary cells for at least 300 cell types. • Should have capabilities for • Ability to read wells and sampleID through worklist when in integration mode.	Automated Cell Counter • High Speed Cell Counter equipped with FOMs for AOPI analysis. Brightfield imaging instrument, Fluorescence Optical Platform, Green and Red Channels, Computer controller, USB cable, power supply, pre-installed software for image analysis. • Imaging Performance: should include brightfield imaging, fluorescent imaging, and pattern-recognition software to quickly and accurately decluster, identify, and count individual cells. • Measuring unit should be cells\mL with cell size range of 5 – 80 microns and concentration range of 1.0 x105 – 1.0 x 107 cells/ml • Should include compatibility to common dyes such as AO GFP, PI, PE, APC, JC-1, FITC, CFDA, Calcein AM, RFP, CFP, YFP and 7AAD • Should include Adjustable Protocol Parameters such as Cell size, Cell detection sensitivity, Live cell sensitivity, Noise reduction, Dilution factor, Fluorescence exposure and threshold. • Autofocus – fast autofocus prior to analysis • Count more than 20 samples with fluorescence in 3 minutes or less using a plate-based format • Consumables should be in SBS format and automation compatible • Automation integration ability with optional API • Create growth curves and automatically calculate doubling time • Unified software platform for single-sample and high-throughput instrumentation to simplify training and documentation requirements • Customizable reports – add graphs, images, charts, and tables • Optional 21 CFR part 11 module for compliance with regulatory requirements • Should be pre-validated for cell lines and primary cells for at least 300 cell types.

	o Time course reporting – easily create growth curves with multiple samples at several time points using the customization tools • Automatic calculation – calculate various data points such as doubling time for individually labeled samples with an easy-to-use interface • Multiple configurations – choose to add up to five fluorescent filters • Capillary based consumables enabling mixing of the cell sample and the viability dye or staining reagent in a single well within the plate for automated imaging, counting and analysis	• Should have capabilities for • Ability to read wells and sampleID through worklist when in integration mode. o Time course reporting – easily create growth curves with multiple samples at several time points using the customization tools • Automatic calculation – calculate various data points such as doubling time for individually labeled samples with an easy-to-use interface • Multiple configurations – choose to add up to five fluorescent filters • Capillary based consumables enabling mixing of the cell sample and the viability dye or staining reagent in a single well within the plate for automated imaging, counting and analysis.

10	High-Content Imaging and Analysis System The High Content Screening system should be a fully automated microscopy system for, high quality, high throughput applications, optimized for a wide range of cell-based assays from standard fixed cell assays to demanding experiments including live cells, iPS models or 3D micro-tissues which promise higher physiological relevance. It should be modular, highly configurable and field upgradable so that it can be customized to the end users' current applications and must be flexible enough to meet the growing demands of tomorrow's high content researchers. The HCS should be capable of running the following applications (Complete imaging & analysis included): Live cell & fixed cell assays, cytotoxicity / proliferation assays, Biomarker identification & quantification studies, cellular migration / invasion assays, phenotypic screening based on intensity / morphology / texture, single cell vs. population based cellular tracking, microbial assays involving bacteria, yeast viral etc., neurite formation experiments, receptor binding & internalization studies, automated FFPE tissue scanning & micro environment mapping, 3D spheroids /microtissues / structural core imaging, visualization & volumetric analysis, live organism studies (zebra fish embryo / C.elegans/ Zebra fish etc.), ratiometric FRET capabilities, co-culture experiments etc. Hardware- Detection/Imaging: • The system should be a fully automated High content imaging & analysis system capable of performing Brightfield, Widefield, Confocal and Digital Phase Contrast imaging modalities. The user should be able to easily switch between these detection modules as per the requirement. The instrument should not require a dark room for its operations in fluorescence imaging. • The excitation source for the High Content Screening	High-Content Imaging and Analysis System The High Content Screening system should be a fully automated microscopy system for, high quality, high throughput applications, optimized for a wide range of cell-based assays from standard fixed cell assays to demanding experiments including live cells, iPS models or 3D micro-tissues which promise higher physiological relevance. It should be modular, highly configurable and field upgradable so that it can be customized to the end users' current applications and must be flexible enough to meet the growing demands of tomorrow's high content researchers. The HCS should be capable of running the following applications (Complete imaging & analysis included): Live cell & fixed cell assays, cytotoxicity / proliferation assays, Biomarker identification & quantification studies, cellular migration / invasion assays, phenotypic screening based on intensity / morphology / texture, single cell vs. population based cellular tracking, microbial assays involving bacteria, yeast viral etc., neurite formation experiments, receptor binding & internalization studies, automated FFPE tissue scanning & micro environment mapping, 3D spheroids /microtissues / structural core imaging, visualization & volumetric analysis, live organism studies (zebra fish embryo / C.elegans/ Zebra fish etc.), ratiometric FRET capabilities, co-culture experiments etc. Hardware- Detection/Imaging: • The system should be a fully automated High content imaging & analysis system capable of performing Brightfield, Widefield, Confocal and Digital Phase Contrast imaging modalities. The user should be able to easily switch between

	system should be via 4 dedicated LASERs with 405 nm, 488 nm, 561 nm and 640 nm. They should be directly coupled within the HCS system and not connected through an external source via optical fibers & liquid guide lights. • An additional near IR LED light source at ~740nm should be in the system for Transmitted light imaging for Brightfield & Digital Phase Contrast imaging. • The system should have 1 sensitive large-format 16-bit sCMOS cameras with a resolution of 2160 x 2160 pixels or better. The pixel size should be 6.5µm or better. • The system should be capable of future field upgradation with an additional 1 or 3 cameras of similar specifications as mentioned above. • The system should offer 8 position emission filters disk. The system should come with the emission filters below. o 435 - 480 nm - Hoechst 33342, Hoechst 33258, DAPI, HCS HCS CellMask™ Blue o 500 - 550 nm - Alexa Fluor® 488, EGFP, MitoTracker® Green, Fluo-4, FITC, Yo-Pro1, Sapphire, o 570 - 630 nm - Alexa Fluor® 568, Propidium Iodide, mCherry, mKate, dTomato, TagRFP o 650 - 760 nm - DRAQ5™, Qdot®705 and transmission mode. • The HCS system should employ Dual spinning disk with microlens concept with confocal optics designed to separate excitation of adjacent fluorescence channels in time and space to reduce spectral crosstalk more than 95% during simultaneous multicolor confocal imaging. • The confocal optics should be assisted by an automated image which generates perfectly superimposed images or similar options when imaging with multiple cameras simultaneously. • The system should have a fully automated 6-lens position turret. The system should include bar-coded objectives for error-free operation. Long working distance objectives should be available for thick bottom cell culture plates.	these detection modules as per the requirement. The instrument should not require a dark room for its operations in fluorescence imaging. • The excitation source for the High Content Screening system should be via 4 or more dedicated LASERs to image visible range from 405 nm to 640 nm. • An additional near IR LED light source at ~740nm should be in the system for Transmitted light imaging for Brightfield & Digital Phase Contrast imaging. • The system should have 1 sensitive large-format 16-bit sCMOS cameras with a resolution of 2160 x 2160 pixels or better. The pixel size should be 6.5µm or better. • The system should be capable of future field upgradation with an additional 1 or 3 cameras of similar specifications as mentioned above. • The system should offer 8 position emission filters disk. The system should come with the emission filters below. o 435 - 480 nm - Hoechst 33342, Hoechst 33258, DAPI, HCS HCS CellMask™ Blue o 500 - 550 nm - Alexa Fluor® 488, EGFP, MitoTracker® Green, Fluo-4, FITC, Yo-Pro1, Sapphire, o 570 - 630 nm - Alexa Fluor® 568, Propidium Iodide, mCherry, mKate, dTomato, TagRFP o 650 - 760 nm - DRAQ5™, Qdot®705 and transmission mode. • The HCS system should employ Dual spinning disk with microlens concept with confocal optics designed to separate excitation of adjacent fluorescence channels in time and space to reduce spectral crosstalk more than 95% during simultaneous multicolor confocal imaging. • The confocal optics should be assisted by an automated image which generates perfectly superimposed images or similar options when imaging with multiple cameras simultaneously. • The system should have a fully automated 6-

	• The system should be able to accommodate a combination of Air and automated Water immersion objectives. The choices of objectives should be from 5X to 63X magnification. The system should have 5X, 10X, 20X & 40X air objectives along with an automated water lens at 20X, 40X & 63X magnification. All other objectives can be quoted as optional. • The automated water pump kit or microfluid liquid handling system for the water immersion lenses should be inbuild inside the system. • The user should be able to introduce up to 3 water immersion lenses & 3 air lens at the same time in the system. • All the lenses, both air & water, should work in all types of imaging modalities i.e., Fluorescence (widefield / confocal) as well as Transmitted light experiments (Brightfield & Digital Phase contrast) in any type of microplate form factor. • The system should be compatible with variable plate formats following SBS standard (6, 24, 48, 96, 384, 1536-well), user-defined formats and slides (in slide holder). Pre-propagated commercially available microplate form factors & design parameters should be available in the system software. • The system should have a high speed, high resolution linear drive scanning stage (XY) with 50nm resolution, 1µm repeatability, z-stage resolution 50nm. • The system should have a dedicated laser-based auto-focus (solid state at or above 780nm). • The High content system should be capable of environmental control modules for live cell imaging applications. Humidity, Temperature control: 37°C to 42°C (± 1°C) & CO2 control: 1-10 % +/- 0.5%. • Workstation PC should be provided that includes Control Computer and Image Analysis System: o Processor: Intel Xeon W5-2465X (16 cores) - RAM: 128 GB o HDD: RAID 10 configuration, ~22TB useable storage o Graphics card: NVIDIA A4000, 16GB o Monitor: 34-inch flat screen, curved o OS: Microsoft® Windows® 10 IoT Enterprise 2021	lens position turret. Long working distance objectives should be available for thick bottom cell culture plates. • The system should be able to accommodate a combination of Air and automated Water immersion objectives. The choices of objectives should be from 5X to 63X magnification. The system should have 5X, 10X, 20X & 40X air objectives along with an automated water lens at 20X, 40X & 63X magnification. All other objectives can be quoted as optional. • The automated water pump kit or microfluid liquid handling system for the water immersion lenses should be inbuild inside the system. • The user should be able to introduce upto 2 or more immersion lens and 3 or more air lens at same time in the system • All the lenses, both air & water, should work in all types of imaging modalities i.e., Fluorescence (widefield / confocal) as well as Transmitted light experiments (Brightfield & Digital Phase contrast) in any type of microplate form factor. • The system should be compatible with variable plate formats following SBS standard (6, 24, 48, 96, 384, 1536-well), user-defined formats and slides (in slide holder). Pre-propagated commercially available microplate form factors & design parameters should be available in the system software. • The system should have a high speed, high resolution linear drive scanning stage (XY) with 50nm resolution, 1µm repeatability, z-stage resolution 50nm. • The system should have dedicated auto-focus system • The High content system should be capable of environmental control modules for live cell imaging applications. Humidity, Temperature control: 37°C to 42°C (± 1°C) & CO2 control: 1-10 % +/- 0.5%. • Workstation which is suitable to the

	LTSC, 64bit, OS runs on separate SSD drive. o Network interface: 10 Gigabit Ethernet. A 10Gbit port is available to connect to the customer network* o Microsoft SQL Server Standard 2019 incl. 5 Client Access Licenses (CAL) • All the hardware components i.e., the LASERs, objectives, confocal module, automated stage, cameras, environmental system, water pump kit, dichroic mirrors, emission filters etc. should be constructed /directly coupled inside the system. • Compatible for automation integration for applications such as with a robotic interface & liquid handling system. Software- Image Acquisition & Analysis: • The HCS system should be controlled by a single software solution for acquisition, visualization, analysis and database management. This should be easy-to use, with an intuitive workflow-based user interface and patented image analysis techniques for processing large volumes of data. • The software must include a seamlessly integrated HCS database, enabling convenient queries using a sortable data tree. • The same single software should enable the user for visualization of cell samples such as spheroids as XYZ view or as 3D view along with interactive 3D view such as rotating, zooming or shifting the 3D sample for detailed exploration. • The same system software should enable 3D segmentation and 3D analysis of cell samples. Includes 3D properties such as volumes, 3D morphology, 3D intensity and 3D position properties as well as 3D textures. • The user should be able to co-register images from DPC, Bright field and fluorescence modes. • Software should be capable of Label free imaging via DPC images, which can be segmented and analyzed for morphology and texture changes. • The system software should have ready-to-go	instrument should be provided. • All the hardware components i.e., the LASERs, objectives, confocal module, automated stage, cameras, environmental system, water pump kit, dichroic mirrors, emission filters etc. should work seamlessly. • Compatible for automation integration for applications such as with a robotic interface & liquid handling system. Software- Image Acquisition & Analysis: • The HCS system should be controlled by a single software solution for acquisition, visualization, analysis and database management. This should be easy-to use, with an intuitive workflow-based user interface and patented image analysis techniques for processing large volumes of data. • The software must include a seamlessly integrated HCS database, enabling convenient queries using a sortable data tree. • The same single software should enable the user for visualization of cell samples such as spheroids as XYZ view or as 3D view along with interactive 3D view such as rotating, zooming or shifting the 3D sample for detailed exploration. • The same system software should enable 3D segmentation and 3D analysis of cell samples. Includes 3D properties such as volumes, 3D morphology, 3D intensity and 3D position properties as well as 3D textures. • The user should be able co-register and quantify images from all modes • Software should be capable of Label free imaging in phase contrast and brightfield which can be segmented and analyzed for morphology and texture changes. • The system software should have ready-to-go protocols / templates available such as proliferation, autophagy, migration etc.

	protocols / templates available such as proliferation, autophagy, migration etc. • It should allow the user to create movie exports from both, the XYZ and 3D view in various file formats – wmv, avi, mpeg2 and png file series. • The system should be able to export plate data automatically to other data management software for image storage and analysis. • Software should have network compatibility and transfer of image files and experiment data files between an office workstation and the imaging instrument, further enabling user access within a multi-user environment. • Software should have the feature like real-time image analysis for every application, enabling useful on-line quality control within screening programs. • Software should export results automatically or in batches into Image Data Storage and Analysis system to access, re-analyze, store, and share the image data. • Software should be very easy to use, consisting of modular building blocks each containing powerful algorithms for implementing ready-made applications or for development of new, unique assays. • System software should have built in algorithms for quantification of changes based on morphological changes. These should be in the form of changes in Symmetry, Density changes, changes in shape, Axis of symmetries and Changes around Radii. • Texture analysis for applications where intensity and morphology fall short should give you robust readout and reproducible results giving you a more complete picture of your biology. • Dynamic property reporting via visualization storage of single cell data for aiding cell tracking from time lapse imaging. • User should be capable of designing custom microplate form factors or designing the layout using the software. • The software should have integrated AI features to segment cellular nuclei in brightfield images. • The system should come with pre-trained Deep	• It should allow the user to create movie exports from both, the XYZ and 3D view in various file formats – wmv, avi, mpeg2 and png file series. • The system should be able to export plate data automatically to other data management software for image storage and analysis. • Software should have network compatibility and transfer of image files and experiment data files between an office workstation and the imaging instrument, further enabling user access within a multi-user environment. • Software should have the feature like real-time image analysis for every application, enabling useful on-line quality control within screening programs. • Software should export results automatically or in batches into Image Data Storage and Analysis system to access, re-analyze, store, and share the image data. • Software should be very easy to use, consisting of modular building blocks each containing powerful algorithms for implementing ready-made applications or for development of new, unique assays. • System software should have built in algorithms for quantification of changes based on morphological changes. These should be in the form of changes in Symmetry, Density changes, changes in shape, Axis of symmetries and Changes around Radii. • Texture analysis for applications where intensity and morphology fall short should give you robust readout and reproducible results giving you a more complete picture of your biology. • Dynamic property reporting via visualization storage of single cell data for aiding cell tracking from time lapse imaging. • User should be capable of designing custom microplate form factors or designing the layout

	Neural Networks (DNNs) to provide efficient & reliable methods for label free imaging, detection & segmentation. • Software should offer supervised machine learning capabilities that enable the software to recognize different cell populations or regions in the same way that you do. Based on advanced machine-learning technology, software should then set parameters for optimal image segmentation and cell classification. • System software should include automated Intelligent acquisition modules for faster scanning of plates by using Software and Hardware pieces to scan and rescan images at low and High magnification for specific areas of well/ cells with precision. This acquisition should be possible on the x, y & z axis. • The software should automatically correct for objective offsets when used with optional automated pre-scan re-scan routine.	using the software. • The software should have integrated AI features to segment cellular nuclei in brightfield images. • The system should come with pre-trained Deep Neural Networks (DNNs) to provide efficient & reliable methods for label free imaging, detection & segmentation. • Software should offer supervised machine learning capabilities that enable the software to recognize different cell populations or regions in the same way that you do. Based on advanced machine-learning technology, software should then set parameters for optimal image segmentation and cell classification. • System software should include automated Intelligent acquisition modules for faster scanning of plates by using Software and Hardware pieces to scan and rescan images at low and High magnification for specific areas of well/ cells with precision. This acquisition should be possible on the x, y & z axis. • The software should automatically correct for objective offsets when used with optional automated pre-scan re-scan routine.
11	All these modules / instruments should be able to communicate with each other via one integration platform / software solution for seamless automated workflow supporting the development of novel organoid models and high-throughput screening assays.	All these modules / instruments should be able to communicate with each other via one integration platform / software solution for seamless automated workflow supporting the development of novel organoid models and high-throughput screening assays.
12	Single vendor/company/point of contact should be able to provide support for the complete integration in terms of application support and service support as well.	Single vendor/company/point of contact should be able to provide support for the complete integration in terms of application support and service support as well.
13	Application support should cover protocol adaptation for primary cells, stem cells and 3D organoids, along	Application support should cover protocol adaptation for primary cells, stem cells and 3D

	with hands-on training, troubleshooting, and expert consultation from certified engineers present locally.	organoids, along with hands-on training, troubleshooting, and expert consultation from certified engineers present locally.
14	Demonstrable experience locally	Demonstrable experience locally
15	ISO 9001, TUV and CE certification required	ISO 9001, TUV and CE certification required
16	Warranty:5 years	Warranty:5 years

Senior Administrative Officer (Purchase)