

Certified Tester Specialist

ISTQB® Mobile Application Testing Foundation Level

Accreditation and Competence Guidelines

Version 2019

Provided by International Software Quality Institute (iSQI)

International Software Testing Qualifications Board



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This document was produced by a core team from the International Software Testing Qualifications Board Mobile Application Testing Working Group.

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1 Objectives

This document provides guidelines for the evaluation of the ISTQB® Mobile Application Testing Foundation Level [ISTQB_MATFL_2019] training by accreditation authorities (Member Boards or ISTQB-recognized Accreditation Boards as written in the last released ISTQB® Accreditation Process). It provides guidance to training providers who want to create courses that will be successfully accredited.

Accreditation is made up of two main parts: the course material and the trainer (also referred to as “tutor” or “instructor”).

2 Overall Rules

The following rules apply to the accreditation of the Mobile Application Testing Foundation Level course material:

1. Traceability and completeness: The course material to be accredited must demonstrate coverage of all applicable learning objectives. Accreditation applications shall include a traceability matrix showing coverage of the learning objectives in terms of presentation and supporting materials.
2. In addition to the above, it is recommended that the traceability matrix shall demonstrate coverage also to the items listed in the accreditation guideline for specific items in the syllabus – see the list described in [Appendix A](#).
3. Timing: For each module, all chapters must be covered with at least as much time as required in the syllabus. Accreditation applications shall include a timing matrix showing the time allocated per chapter. Recommended time for each of the LO is provided in the accreditation guidelines.
4. Content: The material discussed in each chapter and section of the Mobile Application Testing Foundation Level syllabus [ISTQB_MATFL_2019] must be presented. The presentation, exercises, exercise solutions and other course materials must be consistent with the material in the Mobile Application Testing Foundation Level syllabus. (Note: Course material may cover additional learning objectives, topics and/or additional terms. Accreditation authorities shall not consider these as part of the accreditation process unless contradictory with or derogatory towards the ISTQB® program, in which case accreditation shall be denied.)
5. Glossary: For any term defined, the course material must be consistent with the definition of that term in the current version of the ISTQB® Glossary.
6. Examples: All K2, K3 learning objectives must contain at least one realistic software or systems project example (see section 4 below).
7. Exercises and solutions: All K3 LOs and all HOs must have at least one practical, non-trivial exercise drawn from a realistic, software or systems project (see section 5 below). For live classes, all exercises must be solved by the students in class (i.e., not as optional or required homework) and a solution shall be reviewed in class by the instructor. For e-learning or correspondence classes, an exercise solution must be provided with the course material.
8. Full review: Accreditation authorities may not use sampling methods (i.e., evaluating some sections instead of the full course). All materials provided with the course must be evaluated.

3 List of Accreditation Guidelines for Specific Items

In addition to the overall rules that apply to the accreditation of Mobile Application Testing Foundation Level as described in Chapter 2 above, a list of accreditation guidelines for specific syllabus items, mainly driven from the LOs (Learning Objectives) set for this syllabus are listed in [Appendix A](#). Some of the LOs do not have any specific guidelines and that is indicated in the Appendix.

4 Evaluation of Examples

All K2, K3 LOs must contain at least one example. Examples must be appropriate for the module being taught and must be drawn upon realistic software or system projects; i.e., trainers should not use “toy” projects or non-computer-related projects. Ideally, examples should be substantiated and be drawn from real life occurrences.

5 Evaluation of Exercises and Answers

Exercises must be appropriate for the module and K/HO-level taught. They must be applicable to the module being taught, and must be based on realistic software or systems projects; i.e., trainers should not use “toy” projects or non-computer-related projects. Ideally, exercises should be substantiated and be drawn from real life occurrences. Each exercise should also include a proposed solution.

6 Evaluation of Trainer Notes

If the slides are not self-explanatory, or are without supporting text, notes should be available describing what tutors are expected to say on each section. These “trainer notes” can be “presenter notes” in the slides or a separate document.

7 Evaluation of the Trainer (Primary or Secondary Tutor)

Trainers must hold at least the certification that they are teaching. Accreditation authorities may select additional criteria to accredit trainers (e.g., previous teaching or consulting experience, etc.). In such case, the additional criteria will be made public before the accreditation request is sent. Accreditation authorities are reminded that training and (practical) testing experience are required, and that presenting at conferences does not cover the same skills as lecturing on a training course.

8 Evaluation of Additional Material

If trainers reference additional material (such as books not referenced in the Mobile Application Testing Foundation Level syllabus), they shall provide that material to the Accreditation Authority and ensure that this material is not in conflict with the Mobile Application Testing Foundation Level or any other ISTQB® syllabi.

Technical terms, names of tools etc. shall be the same as described in the published syllabus unless that tool is succeeded by another, or the name of the tool changes, in this case the latest tool should be used. Similarly, if a link or a reference has been updated, then the updated one shall be used. (Especially for appendix items).

9 Competence Guidelines

Competence guidelines help a training provider to create applications which include hands-on exercises. To save time, some of the hands-on exercises may be combined. These are indicated in the syllabus. Some of the exercises are optional and can be left out from the course submitted for accreditation. Recommended times for each of the exercises is provided in the guidelines listed in Appendix A.

Appendix A: Accreditation Guidelines for Learning Objectives

LO Number	LO Description	K-Level	Reco. Time	Accreditation Guideline
MAT-1.1.1	Describe how available mobile analytics data can be used as input for the test strategy and the test plan.	K2	15 min	<p>Platform providers such as Google and Apple publish their device distribution data. Various third-party sites such as [1] also provide device distribution data.</p> <p>Show statistics and business analysis, for example, choose a particular country. Use this data to prioritize the devices used for testing.</p> <p>Show some other countries where the device distribution is vastly different to emphasize the fact that device proliferation data is key to creating a test strategy that is specific to the geographic location.</p>
MAT-1.2.1	Distinguish between various business models for mobile applications.	K2	15 min	<p>Show the different types of models. Explain the advantages and disadvantages, and elements that assist in making the decision about which model to choose for a specific app.</p>
MAT-1.3.1	Recall different types of mobile devices.	K1	15 min	<p>Provide information about the variety of mobile devices. Show any links to companion and wearable devices. Show differences and similarities between them.</p>
MAT-1.4.1	Distinguish between different types of mobile applications.	K2	25 min	<p>Provide information about the different types of stores and the various ways to download an app. Show the variety of the stores, including 3rd party, enterprise and general download store locations. Mention that the store owner is responsible for the full serviceability of the store (e.g., performance, capacity, reliability, and security)</p> <p>Provide information about the differences between the types of mobile apps, their advantages and disadvantages, as well as any considerations that need to be taken into account before choosing the app type, based on their specific characteristics.</p>

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MAT-1.5.1	Distinguish between general architecture types of mobile applications.	K2	25 min	<p>Explain with details about the following:</p> <p>Client-side architecture: Communication and data storage needs between client and server also how this plays a role in choosing an appropriate architecture.</p> <p>Data synchronization methods: Explain the various synchronization methods, e.g., push and pull, store-and-forward, and synchronous and asynchronous communication.</p>
MAT-1.6.1	Apply characteristics and specifics of the mobile market in preparing a test strategy.	K3	10 min	Create an exercise that demonstrates an ability to contribute to a test strategy using the relevant information provided in this chapter.
MAT-1.7.1	Give examples of the challenges associated with testing mobile applications.	K2	30 min	<p>Provide detailed information about the different type of challenges and their characteristics:</p> <ul style="list-style-type: none"> ● Platforms: Challenges related to various platforms and their fragmentation. Currently Android and iOS are dominant, but there are others as well, such as Windows and Blackberry. New platforms might also arrive on the market in the future. ● Hardware: Challenges related to multiple manufacturers and compatibility of applications concerning the wide range of devices, various CPU and device specifications, various sensor types, some of which are commonly found in almost all smart phones and some of which are model/manufacturer-specific. ● Operating system (OS): Android is an open-source OS and consequently many phone manufacturers customize the OS, resulting in potential changes to the behavior of the application on mobile devices from different manufacturers. ● Software: Challenges related to operating system, user interface compatibility, third party tools such as virtual keyboards, as well as browser compatibility issues arising from various versions. ● Network: Challenges relating to multiple network operators and network types, such as Wi-Fi, GSM, 3G, 4G, and 5G, as well as different connection types, bandwidth and communication with backend.

				<ul style="list-style-type: none"> Resources: Challenges related to limited resources such as energy, local storage, bandwidth, and performance. Distribution channels: Challenges relating to application stores, their guidelines, the direct user to user feedback via ratings, ease of installation/de-installation, and market competition Users: Challenges relating to the expected user groups, such as professionals, young users, and elderly users, including their expectations, usage patterns, and scenarios. This is of much higher importance compared to desktop software because of the emotional relationship between users and their devices. <p>Compatibility: Challenges relating to different screen sizes, aspect ratios, and resolutions, various device display technologies, as well as device types such as smartphones, tablets, phablets, and wearables.</p>
MAT-1.8.1	Describe how risks specific to mobile applications may be mitigated.	K2	20 min	<p>Show that risks could be driven by individual or combinations of challenges. Show examples of real-life risks and how to identify them. Show common risks in the context of mobile application testing and detail various ways to mitigate them.</p> <p>Typical risks in the context of mobile (non-exhaustive list):</p> <ul style="list-style-type: none"> Incomplete test coverage because of the unavailability of mobile devices for test execution. Lack of market acceptance due to not conforming with user expectations of the platform's look and feel. Poor comments for the app on the respective stores from where the apps were downloaded. Application failure on certain devices or operating system versions. Lost data due to network failures. Rendering issues due to changing orientation. Security risks according to the mobile character of smartphones and tablets.

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MAT-2.1.1	Describe device-specific features and hardware which should be considered for testing.	K2	10 min	No specific guidelines.
MAT-2.1.2	Prepare tests for the app's compatibility with screen sizes, aspect ratio, and screen density.	K3	10 min	<p>While designing tests, refer to market research and/or available information about the combination of screen sizes and screen density in relation to the percentage of devices in the market. See, for example, the following link: [2] and refer to the section on "Screen Sizes and Densities", where you can see that there are combinations that cover ~90% of the market and other combinations which are not relevant.</p> <p>Create an exercise that shows the training participants the impact of the dots per inch (dpi) per device class. The exercise must cover at least two devices, as given in the competence guideline, so that participants can identify issues based on the dpi difference.</p> <p>There must be a hands-on exercise for at least one application type (web or native) and a demonstration for another application type (web or native).</p>
MAT-2.1.3	Describe how tests can show the potential effects of device overheating on the system under test.	K2	10 min	Use or create an app which is able to generate a lot of heat by unnecessary CPU work, data transfers, or both, so that the temperature of the device is increased. Test an app for data transfer and functionality under these conditions, which ideally cause the app to malfunction. However, a tool can also be used to demonstrate, for example, dropping of the CPU frequency, to show the effect of temperature rise on the CPU frequency.
MAT-2.1.4	Recall different test types for testing of the various input sensors used in mobile devices.	K1	10 min	Provide a list of all available sensors and keep this list up-to-date. Add details and information for each and every sensor.
MAT-2.1.5	Recall tests to be run for various input methods.	K1	10 min	<p>Demonstrate testing an app with various keyboards installed. The app should clearly be able to demonstrate some of the defects related to keyboard testing, such as opening of inappropriate keyboard, capitalization, and covering of fields.</p> <p>The same or a different app should be used for testing gestures on various screens. The app should be able to demonstrate some of the defects related to supported gestures not working as expected and inappropriate</p>

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				handling of some of the unsupported gestures.
MAT-2.1.6	Describe how tests can reveal user interface issues when changing screen orientation.	K2	10 min	Create an application or use an existing application where changing the orientation causes the app behavior to be compromised, (e.g., the filled data disappears, the GUI loses its coherence, the screen is not painted properly, or the current session is dropped.) Include scenarios for changing the orientation from portrait to landscape and vice-versa.
MAT-2.1.7	Prepare tests for an app using typical mobile device interrupts.	K3	10 min	<p>Explain and prepare an exercise to show the students how interruptions occur and that the app should continue to function correctly, preserving its state, data, and sessions.</p> <p>Notes: The interrupts can come from the user by navigating to previous or home screens, notifications popping up, or other events such as calls and messages. The app should continue to function correctly, preserving its state, data and sessions. Some common types of interrupts are voice calls, messages, charger, low memory notification, and other notifications while the application is running.</p>
MAT-2.1.8	Prepare tests for changing the access permissions to the device features requested by the app.	K3	5 min	Create an application or use an existing application and change the user's permission(s) for access to the device's features, (such as camera). Note the specific change(s) made to the application.
MAT-2.1.9	Prepare tests to verify the impact of an app on a device's power consumption and the impact of its power state on the app.	K3	5 min	Create an application or use an existing application that consumes the device's power. Present the way it consumes the power by using a trusted and reliable app that measures power consumption (e.g., show that the measuring app is authentic and neutral from the measurements perspective).
MAT-2.2.1	Prepare tests for the handling of notifications by the system under test.	K3	5 min	Create an application or use an existing application where the notifications can be enabled and disabled through the system configuration (preferences or settings). Show that the notifications are sent or not under different conditions.
MAT-2.2.2	Describe how tests can verify correct functionality of quick-access links.	K2	5 min	Provide additional quick-access tests that can be applied to each of the platform features.
MAT-2.2.3	Prepare tests for the impact on an app of the	K3	5 min	Create an application or use an existing application where changing the user

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	user preference settings provided by an operating system.			preference (settings) can be observed to change the application's behavior or result in changes in the UI.
MAT-2.2.4	Distinguish between different tests required for native, web and hybrid applications.	K2	5 min	Explain in detail the different tests required for native, web and hybrid applications.
MAT-2.2.5	Recall tests required for apps which are available on multiple platforms or operating system versions.	K1	10 min	No specific guidelines.
MAT-2.2.6	Recall tests required for co-existence and interoperability with other apps.	K1	5 min	No specific guidelines.
MAT-2.3.1	Summarize the tests for connectivity testing, including those across networks, when using Bluetooth, and when switching to flight mode.	K2	10 min	(Optional) Tests can be conducted on any application where the switching between cell data and wi-fi can be used as one of the tests. A template can be used for the tests to be performed which includes items such as time, and specific actions to be taken. Additional situations may be created, such as a dual sim phone switching from sim 1 to sim 2 for data connectivity.
MAT-3.1.1	Prepare installability tests for mobile apps.	K3	10 min	Sideload an app on Android requires turning on the development permissions and settings for loading apps, such as from third party sources. For Android (mandatory) use the command line and ADB commands in the training to perform installation and de-install (optional). For iOS do this via XCode/iTunes.
MAT-3.1.2	Prepare stress tests for mobile apps.	K3	5 min	Monkey is an Android command line tool for stress testing, which sends random events at different frequencies to the device, e.g., click, gestures and touches.
MAT-3.1.3	Give examples of security issues related to mobile apps.	K2	5 min	No specific guideline.
MAT-3.1.4	Recall time and resource behavior considerations for mobile apps.	K1	5 min	No specific guideline.

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MAT-3.1.5	Prepare usability tests for mobile apps.	K3	10 min	Create an application or use an existing application containing some faults that can be found with usability tests. This should be specific to mobile apps (e.g., use of different versions of the same application can also be valid).
MAT-3.1.6	Recognize the type of tests required for database testing of mobile apps	K1	10 min	No specific guidelines
MAT-3.1.7	Summarize the tests required for internationalization (globalization) and localization testing of mobile apps.	K2	10 min	Explain and show examples (e.g., Unicode aspects for localization).
MAT-3.1.8	Summarize the need for accessibility testing in mobile application testing.	K2	5 min	Provide links from sites of the platform owners (Android and iOS), and show to the standards for accessibility.
MAT-3.2.1	Describe the additional test levels, such as field testing, and the associated extra activities required for effective mobile application testing.	K2	10 min	Explain the various environmental factors and conditions, such as more or less light, cold or warm fingers.
MAT-3.2.2	Describe the tests required for carrying out application store approval for publishing apps.	K2	10 min	Provide details about different guidelines and checklists that are available for the testers to use as part of the approval of the application store.
MAT-3.3.1	Recall session-based test management, personas and mnemonics in the context of exploratory mobile testing.	K1	20 min	Use the following link as a reference to exploratory testing: [3] . Provide a session sheet template and a filled sample session sheet. Provide some examples of mobile-specific mnemonics.
MAT-3.3.2	Describe the usage of tours and heuristics as exploratory techniques for mobile app testing.	K2	20 min	Show examples for tours and heuristics that are implemented as exploratory test techniques in mobile application testing.
MAT-3.3.3	Make use of a mobile specific tour (such as Feature tour) to test a mobile app.	K3	20 min	Create an exercise utilizing tours and session-based testing.

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MAT-3.4.1	Match the test process, as described in [ISTQB_CTFL_2018], to the needs of mobile application testing.	K2	15 min	No specific guideline.
MAT-3.4.2	Describe the approaches to testing at each test level, specific to mobile application testing.	K2	15 min	Describe the Testing Pyramid in the mobile context, and the possibility for flipping it.
MAT-4.1.1.	Recall the development environments used for mobile application development.	K1	15 min	No specific guideline
MAT-4.2.1	Recall some of the common tools supplied as part of application development platforms.	K1	10 min	<p>Android</p> <p>AVD Manager for creating and managing virtual machines</p> <p>ADB (Android Debug Bridge) for interacting with device/emulator using the command line and perform a host of tasks.</p> <p>AAPT (Android Asset Packaging Tool) used to view, create, and update Zip-compatible archives</p> <p>Android Device Monitor for obtaining information about running processes, thread, and heap information etc.</p> <p>Monkey tool for injecting a pseudo-random stream of user events to an app or device.</p> <p>Optional:</p> <p>iOS Instruments: tool for performance analysis and testing, and for dynamically tracing and profiling macOS and iOS code.</p>
MAT-4.3.1	Understand the differences between emulators and simulators.	K2	10 min	No specific guideline
MAT-4.3.2	Describe the use of emulators and simulators for mobile application testing.	K2	5 min	<p>Explain the usage of emulators supplied by the mobile application platform providers (e.g., Google; Apple). Show examples of emulators.</p> <p>Show an application with related simulator or use an existing one, and show how to operate the application using the emulator(s) as well as the simulator.</p>

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MAT-4.4.1	Distinguish between various approaches to setup a test lab.	K2	10 min	Present a scenario where you need to create a suitable approach to setup a test lab for testing an app that is either created especially for this topic or an existing application. Where possible present different types of applications and approaches.
MAT-5.1.1	Distinguish between common automation approaches and frameworks for mobile application testing.	K2	15 min	No specific guidelines.
MAT-5.2.1	Describe various automation solutions for testing mobile apps.	K2	15 min	No specific guidelines.
MAT-5.3.1	Recall the various parameters to be considered during the evaluation of mobile testing automation tools.	K1	10 min	No specific guidelines.
MAT-5.4.1	Distinguish between common approaches of creating test labs with advantages and disadvantages with respect to test automation.	K2	15 min	No specific guidelines.

Appendix B: Competence Guidelines for Hands-On Objectives

This chapter provides guidelines for the examinee for the competencies to be mastered by [ISTQB_MATFL_2019]. It also provides guidance to training providers who want to create courses that will be successfully accredited.

The exercises mentioned in this document will help those undertaking self-study to understand the kinds of hands-on exercises they need to do to master the competencies. It shall also help the training providers create appropriate hands-on exercises for accreditation. They should read this document in conjunction with the accreditation guidelines.

Each hands-on exercise requires an application. It is mandatory for accreditation to provide the installers/apk files for these applications or the link to the respective stores from where the applications can be installed. All hands-on exercises must be submitted with the outcomes of the exercise such as the bugs to be found, platforms to be selected, behavior to be observed, together with other submissions as per the accreditation guidelines.

Note: Most of the exercises are mandatory and are therefore not marked as such. Those which are *optional*, are marked accordingly.

HO Number	HO Level	Reco. Time	HO Text	Competency Guideline
HO-1.1.1	H3	15 min	Based on data collected from one or more analytics data sources (geographic location, platform / operating system version, and device type distribution), select the device types to be tested and their corresponding prioritization. Note: HO-1.1.1 and HO-1.7.1 (below) can be combined.	Collect data from the Google (or any other) website about the distribution of various Android OS versions and device types, and also from a third-party site such as gs.statcounter.com. For a listed geographic location, use this data to arrive at a prioritized list of platforms to be tested. Choose the top five platforms only and give a reason. Optional: Include iOS in this exercise and choose additionally the top five iOS devices.
HO-1.7.1	H1	5 min	Gather market data such as device or operating system market share for a selected region. Gather data for screen sizes and density. Create a list of five devices and calculate the expected market coverage for this list. Note: HO-1.1.1 (see earlier) and HO-1.7.1 can be done together.	Collect data from the Google (or any other) website about distribution of various Android operating system versions and device types, and also from a third-party site such as gs.statcounter.com. For a listed geographical location, use this data to arrive at a prioritized list of platforms to be tested. Choose the top five platforms and explain the reason. Optional: Include iOS in this exercise and choose additionally the top five iOS devices.

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HO-2.1.1	H1	5 min	Test an app for several mobile device functionality while the system under test (SUT) is in use to verify correct functioning of the SUT.	<p>Participant is able to identify issues related to the possible impact of various device hardware features on the system under test and the application under test.</p> <p>Test it when using the different device buttons for power on/off, volume control, and using Bluetooth, camera, speakers, microphone, and headphone access while the app is running.</p>
HO-2.1.2	H3	10 min	Test an app on several devices (virtual or physical) to show the impact of the resolution and screen size on the app's user interface.	<p>Install an application on at least a low-end device with small resolution such as 480x340, and a high-end device with resolution such as Full HD. Discover the impact on visual appearance (shape, color), usability and accessibility.</p> <p>Repeat using a responsive or adaptive web app. The learner should be able to identify resolution-related issues.</p>
HO-2.1.5	H0	15 min	Test an app for various types of inputs, including keyboard-related tests with multiple installed keyboards, gesture-related tests and (optionally) camera-related tests.	<p>Install multiple keyboards on your device. Install an app on the device that takes keyboard inputs and test it using keyboard-related tests. Identify the defects in the app for various scenarios.</p> <p>Use the same or a different app for performing gesture-related tests. Create a list of common gestures supported by that app and test it for all supported and unsupported gestures.</p>
HO-2.1.6	H3	15 min	Test an application to check the effect of orientation change on the functionality of the app, including data retention and correctness of graphical user interface.	<p>Select an appropriate app where data, text, images, or both need to be entered. Change orientation from portrait to landscape and vice-versa, and verify under various states of data entry that the data already entered is retained and that the orientation change doesn't distort the graphical user interface.</p> <p>For accreditation, the training provider should identify or create apps which show some bugs under these situations.</p>

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HO-2.1.7	H3	10 min	Test an app for several mobile device interrupts while the application is in use.	<p>Select an app where interrupts have an impact on the graphical user interface or functionality. Test it using various interrupts such as phone calls, navigation to home screen, alarms, and reminders and/or pop-up notifications.</p> <p>Verify that the app is able to handle the interrupts well and identify the defects where the interrupts cause defects which relate to the functionality, user interface, performance, or other defects.</p>
HO-2.1.8	H3	15 min	Test an app's permissions management by permitting and denying requested permissions and observing behavior when folders and sensor settings are denied at installation or changed after installation.	<p>Choose an app that asks for a large number of permissions, for example, camera, media, contacts, phone, SMS, location etc. and then carry out the scenario as described in the HO.</p> <p>Participant should be able to relate permissions requested for various app functionality to tests that are designed to uncover issues related to denied permissions.</p>
HO-2.1.9	H3	15 min	Test an app under varying battery power levels to uncover consumption data and establish performance under low and dead battery states.	<p>Participant is able to identify the current power state, measure power consumption, and uncover issues related to power level.</p>
HO-2.2.1	H2	10 min	Test the effect of receiving notifications when an app is in the foreground and the background. Test the effect of changing notification settings on the app's functionality.	<p>Test an app which also runs in the background and which supports notifications. Perform actions as per the HO.</p>
HO-2.2.2	H3	10 min	Test an app for shortcut/quick-access functionality.	<p>Test an app for the application shortcut under two situations; when the app hasn't been launched at all (say, after a reboot) and when the application was active. Verify that the behavior of the shortcut is the same as the behavior from within the app.</p> <p>Optional: Do a similar exercise for force/3D-touch on iOS making use of quick actions, peek and pop, and pressure sensitivity.</p>
HO-2.2.3	H3	10 min	Test a running app by changing the input value options for the preferences provided by the operating system.	<p>Participant is able to change preferences while the app is running to uncover related issues.</p>

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HO-2.2.4	H0	15 min	(Optional) Identify the tests needed for apps, depending on the app type.	Choose three apps, one of each of type native, web, and hybrid and demonstrate some tests specific to each type of application.
HO-2.3.1	H0	10 min	(Optional) Conduct tests on an application which is transferring data to the server when the phone switches between Wi-Fi and cell-data connectivity based on their available signal strengths.	Choose an application which transfers data to the server. The wi-fi signal can be easily controlled and it goes off while data is being transferred. The app should not lose the data. Retry should be made with the fallback connection and, if possible, the data should be transmitted. Worst case scenario should result in the user being required to repeat the data transfer manually.
HO-3.1.5	H2	30 min	Choose a test tour, a mnemonic or a heuristic for usability testing an app using session-based test management. Note: HO-3.1.5 and HO-3.3.1, HO-3.3.2 and HO-3.3.3 may be combined.	Participant knows or is able to find a heuristic, a tour or a mnemonic for usability testing in the web. Furthermore, the participant is able to execute a usability test with session-based testing and can fill out a session sheet.
HO-3.3.1	H2	-	Choose a mnemonic (or part thereof) which is specific to mobile application testing for testing of an app using session-based test management. Note: HO-3.1.5 and HO-3.3.1, HO-3.3.2 and HO-3.3.3 can be combined.	Choose an application and choose a mnemonic and use part of that to perform testing of the app and find some bugs.
HO-3.3.2	H2	-	Choose a mobile specific heuristic for testing of an app. Note: HO-3.1.5 and HO-3.3.1, HO-3.3.2 and HO-3.3.3 can be combined.	Choose an application and choose a mobile-specific heuristic and use part of that to perform testing on the app and find some bugs.
HO-3.3.3	H2	-	Choose a mobile specific test tour for testing of an app. Note: HO-3.1.5 and HO-3.3.1, HO-3.3.2 and HO-3.3.3 can be combined.	Choose an application and choose a mobile-specific tour and use part of that to perform testing on the app and find some bugs.

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HO-4.2.1	H1	10 min	Use tools from the software development kit to take screenshots, extract a log and simulate incoming events.	<p>Mandatory: Participant is able to use an Android device monitor to take screenshots and extract the current stack trace. Participant is able to create a screen video on the device and extract it from the device. The participant can simulate an incoming call or SMS on the device</p> <p>Optional: Participant can make screenshots and extract logs for another platform, such as IOS.</p>
HO-4.3.2	H1	20 min	Create and run a simulated/emulated device, install an app and execute a few tests on it.	<p>Mandatory: Participant is able to create a virtual Android device, install an app on it and run it.</p> <p>Optional: User is able to do the same for another platform, like iOS.</p>

Appendix C

1 ISTQB® Documents

- [ISTQB_CTFL_2018]:
ISTQB® Certified Tester – Foundation Level Syllabus – Version 2018
- [ISTQB_MATFL_2019]:
ISTQB® Certified Tester Specialist – Mobile Application Testing – Foundation Level Syllabus – Version 2019

2 Links (Web/Internet)

Disclaimer: All Links working as of 5 January 2019

[1] <http://gs.statcounter.com/>

[2] <http://www.androiddocs.com/about/dashboards/index.html>

[3] <http://www.satisfice.com/articles/sbtm.pdf>