

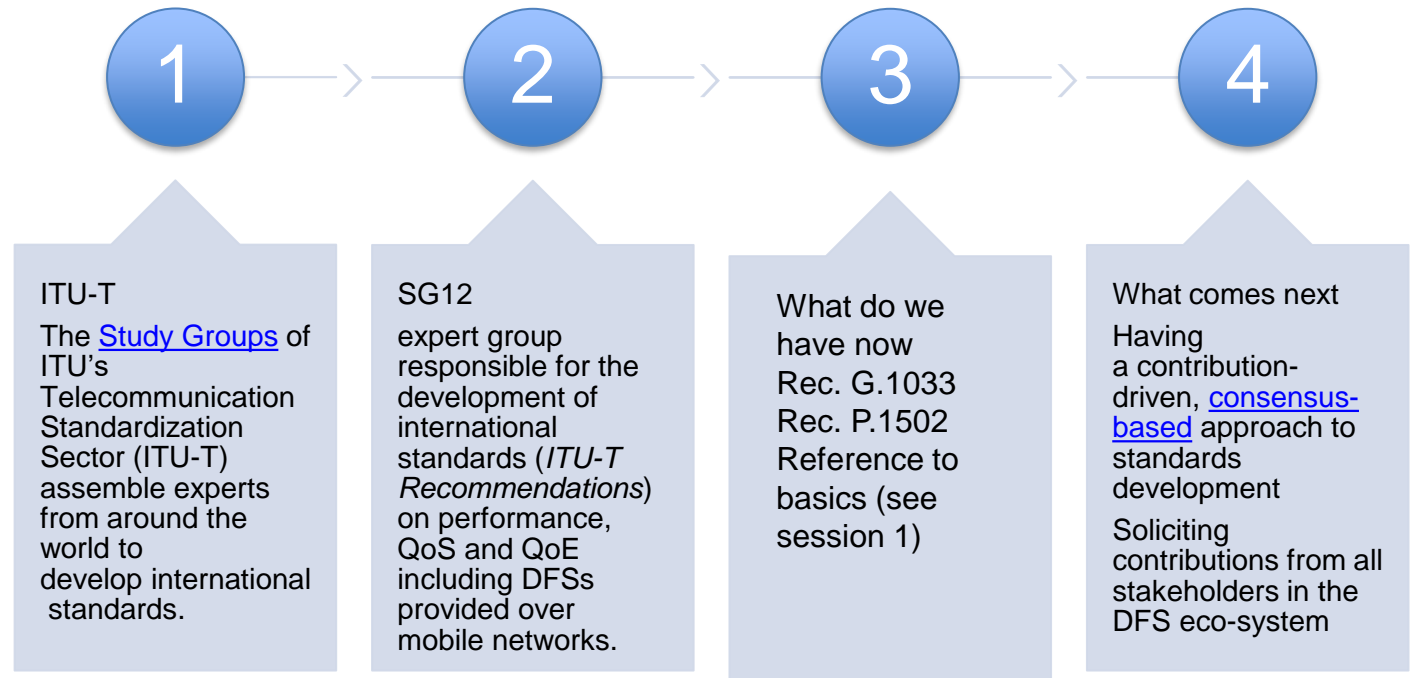
Session 2: Deep dive on methodologies for DFS quality assessment

Q20/12 overall structure and overview

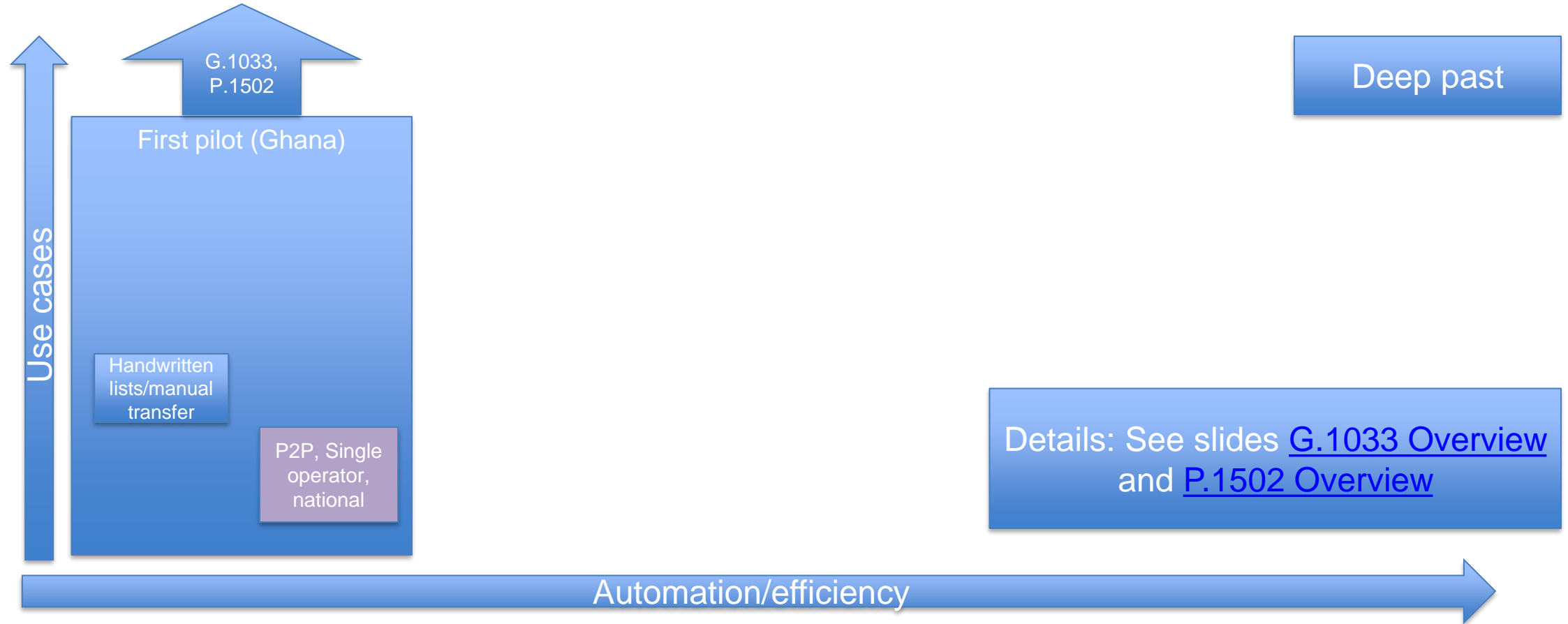
Q20: Perceptual and field assessment principles for QoS and QoE of DFS.

In response to:

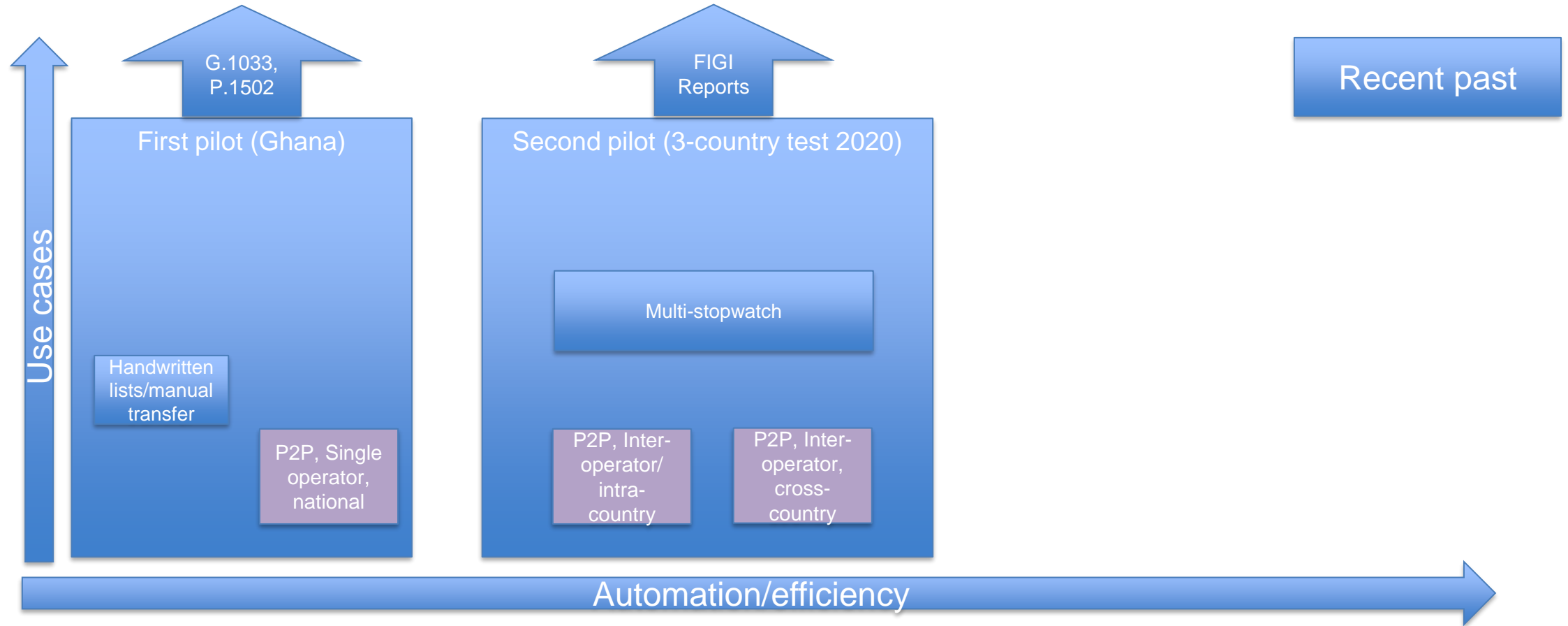
- PP-18 Resolution 204 – Using ICTs for bridging the financial inclusion gap
- WTSA-16 Resolution 89 – Promoting the use of information and communication technologies to bridge the financial inclusion gap.



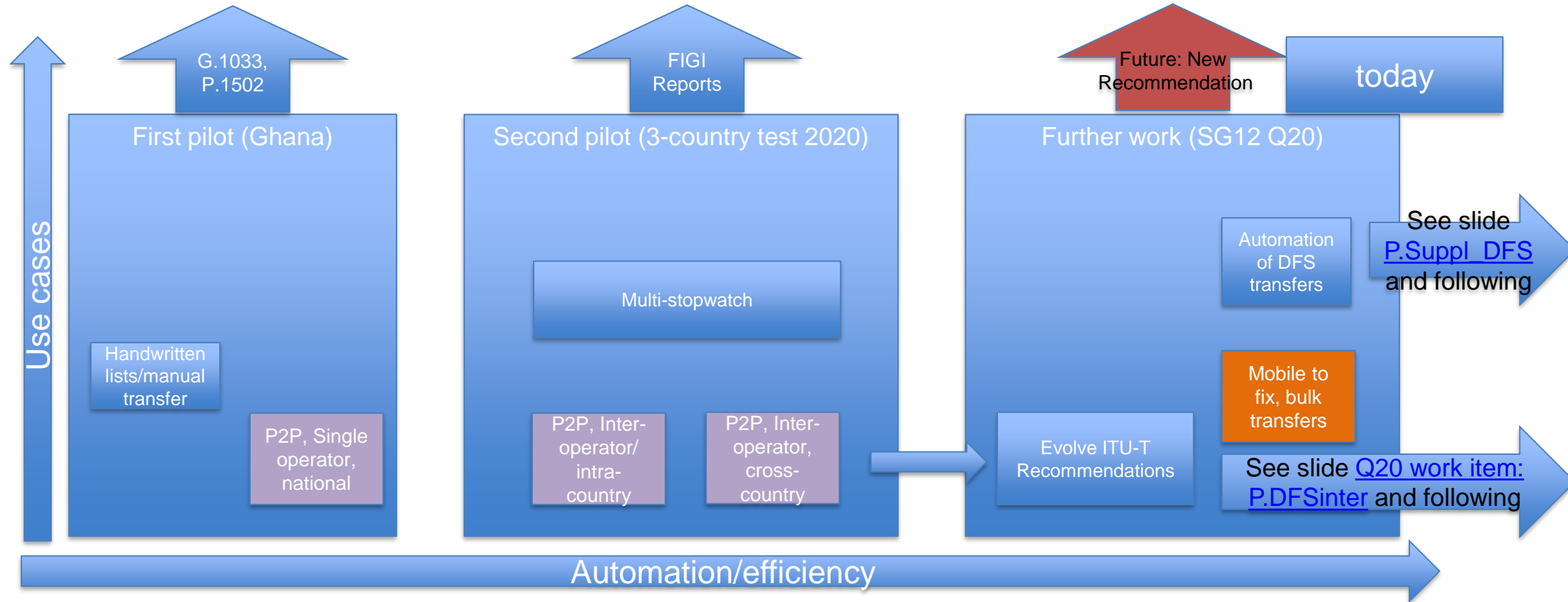
DFS metrics and methodology evolution (1/3)



DFS metrics and methodology evolution (2/3)



DFS metrics and methodology evolution (3/3)



G.1033:

Quality of service and quality of experience aspects of digital financial services

- This Recommendation highlights important aspects related to quality of service (QoS) and quality of experience (QoE) which shall be considered in the context of digital financial services (DFSs)
 - Use cases (P2P/B2P, National/Cross-country, Smartphone/ feature phone)
 - Legal entities (Case A, Case B)
 - Mobile network QoS (network availability, accessibility, service accessibility, integrity and retainability) and how high DFS reliability can be achieved
 - DFS stakeholders (end users, DFS operators, Regulators, Network operators)
 - QoS monitoring

Concludes by urging stakeholders to share more information to improve the quality of standards development and testing- DFS.

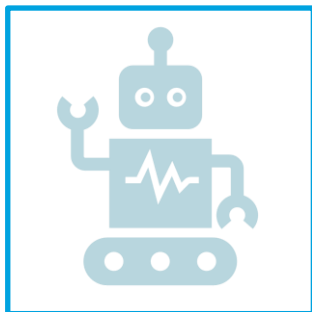
P.1502:

Methodology for QoE testing of digital financial services

With the understanding that QoS and quality of experience (QoE) of DFS relies on the QoS and proper functionality of mobile networks, respective quality metrics and testing methodologies need to be defined.

- This Recommendation details the DFS testing methodology and connects to a field test using this methodology which has been conducted in Ghana.
 - Test scenarios (roles and entities, action flows, automation of tests)
 - Transaction model
 - End-to-end DFS KPIs (MTCR, MTCT, MTFTRR)
 - Acquisition of data on DFS Transactions (data collection models)
 - Background measurements and data validation and processing
- Overall DFS performance is the result of two subsystems: Mobile network and DFS infrastructure
 - Both subsystems need to have good performance for overall good results
 - Poor performance in one system may be hard to detect if the other system does also not perform well (risk of “evasive finger pointing”)
 - Overall good quality can be achieved easier when respective regulators co-operate

Q20 work item: P.Suppl_DFS → new ITU-T Supplement



"Considerations on automation of DFS testing"



Target date: 2022



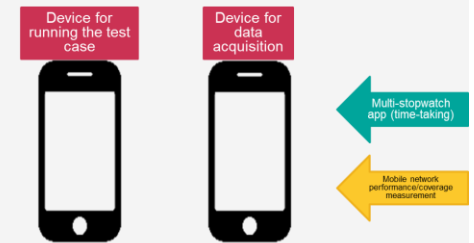
Base text will be presented at the next SG12 meeting (June 2022)

Essence of P.Suppl_DFS

- DFS measurement methodology involves a two-channel approach: Measuring mobile network performance, and measuring DFS end to end performance
- Fully automated mobile network performance testing is a well-established art, 100% automation of the full chain is no problem
- Automation of DFS testing is harder:
 - Platform devices in real use are often „feature phones“; DFS implementations are less accessible to external access (may require rather deep „hacks“); high degree of localization, making it harder to develop tools (devices may have to run in the same country); testing may trigger DFS-inherent security mechanisms; use case involves transfer of real money, i.e. developers have to „tread carefully“

Divide testing into „channels“

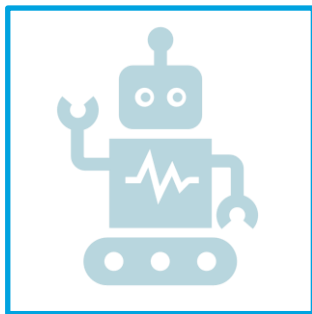
- Mobile network performance
 - Highly automated testing
 - Selected test cases of network features relevant for DFS, parameterized for the purpose
 - Standardized KPI where possible, define additional ones where necessary
- DFS performance
 - Run on „real user devices“
 - Tool support (e.g. time-taking by multi-stopwatch)



Excerpt from considerations on DFS test automation

- „Electronic“ control of activities on a device; alternatives
 - Full implementation of the DFS related processes in a testing environment
 - Using real devices and basic processes, and put a control layer on top of it
 - May need to work interactively, i.e. cannot just execute a sequence of commands/actions but needs to „read“ responses of the DFS system
- „Mechanic“ control of activities, e.g. by physical actuators („robot finger“)
 - More generalized solution, but required hardware will drive cost
 - Will still need interactivity („read“ display to decide/time actions)

Q20 work item: P.DFSinter → new ITU-T Recommendation



"Extended methodology for cross-country and inter-operator Digital Financial Services testing"



Target date: 2023



Updated base text will be presented at the next SG12 meeting (June 2022)

Essence of P.DFS_Inter

- ITU-T Rec. G.1033 and P.1502 are the basis of the definition of metrics and methodologies for testing DFS in the field, with a clear path towards extensions in scope and evolution of methodologies.
 - Extend use cases from same-operator, same-country to inter-operator and cross-country person-to-person money transfers
 - Evolve methodologies
 - Tool support to increase productivity and data quality: reduce stress for human testers, reduce potential for errors
 - Higher degree of automation in data handling and processing: Higher efficiency and more robustness of processes
 - Asynchronous and multi-site testing: Testing teams do not have to synchronize their activities

P.DFS_Inter: Course of action

- ✓ Methodologies and tools have been tested in the field (3-country campaign, 2020); results have been published in FIGI report
- ✓ Strategy of integration of new material into the standardization process has been defined
- Under way: extension and evolution of existing material (ongoing)

Impulse: Beyond technical aspects

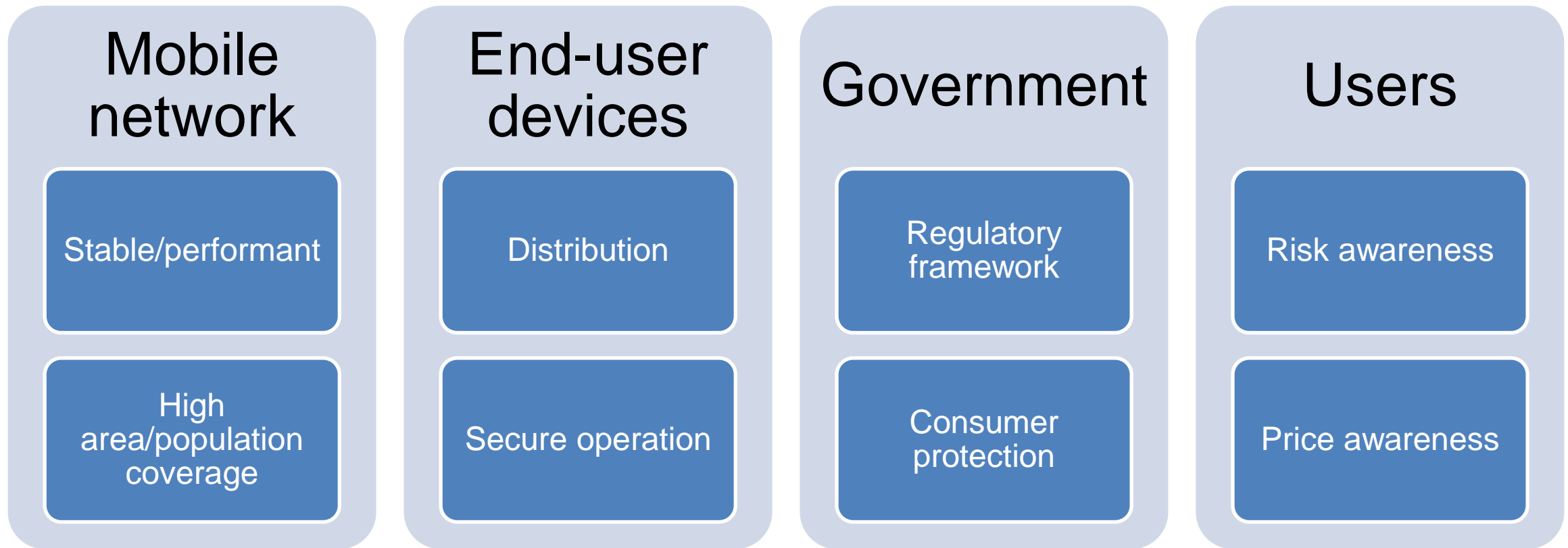
- What is required for the introduction of DFS for the benefit of the entire economy and society?
- Technology must be adequate
 - Sufficient penetration of adequate mobile terminals (under usability and transaction-security aspects)
 - Sufficiently stable and performant mobile network
 - Sufficiently stable and performant DFS infrastructure
- But it needs more:
 - Adequate regulatory framework and oversight processes
 - Adequate structures and processes for customer protection

About the need to regulate

- Is it “popular”?
 - In the sense of “widespread”; not necessarily a single product or service offering, but an entire category
- Does it have a far-reaching impact?
 - Enabler for other applications or ecosystems
 - Effects on the general economy
- Regulate it if
 - it’s popular
 - It’s „risky“ if not regulated
- Relation between regulation and standardization
- Example: driving speed limit in cities
 - Purpose: Prevent damage
 - No need to standardize cars, though. What it needs is a standardized definition of “speed” and acceptable level of risk

This slide is just for preview – the topic will be dealt with in more detail in the course of this Workshop

The „fitness“ matrix



Wrap up

- There are currently two recommendations that cover the definition of metrics and methodologies for testing DFS in the field.
- There are two work items in progress:
 - One that will be a collection of guidance on aspects of automation in DFS testing that need to be included in the test conditions as well as specific instructions that experimenters should consider.
 - The other is an extension to the work covered by P.1502, with data collected and validated during a multi-country field test, to cross-country and inter-operator use cases. Also, additional testing modes and a new tool for recording test-related event operation will be introduced.
- Study Group 12 is your go-to to develop standards and discuss technical, operational, policy aspects of performance, QoS and QoE
- Q20/12 welcomes contributions from all stakeholders in the DFS eco-system (operators, vendors, service providers, academia, regulators including members of the ITU member states) to participate in the standardization work that will drive improvement in the Quality of Service and Quality of Experience for DFS
 - More use cases including bulk payments, transfer between mobile and bank accounts
 - Extended range of platforms (app-based implementations)

Q&A