

QoS and QoE for mobile money

ITU-T G.1033: *Quality of service and quality of experience aspects of digital financial services and*
ITU-T P.1502: *Methodology for QoE testing of digital financial services*
– *and way forward on QoS and QoE of DFS*

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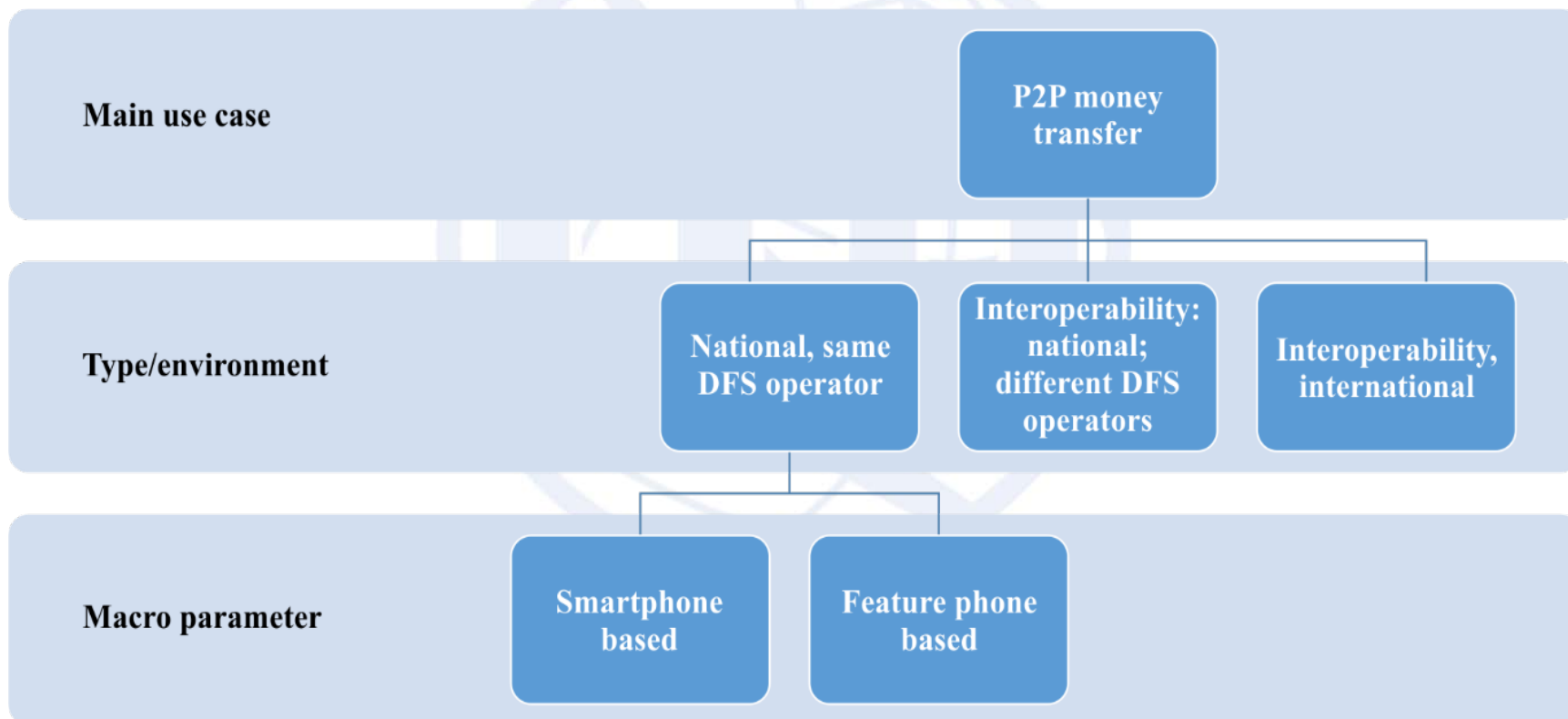
ITU Workshop on Network Performance, QoS and QoE
N'Djamena, Chad, 2-3 March 2020



- [ITU-T G.1033](#):
- *Quality of service and quality of experience aspects of digital financial services*
- *Approved October 2019*

- Recommendation ITU-T G.1033
 - 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)
 - builds upon the discussions in the (now closed) DFS Focus Group

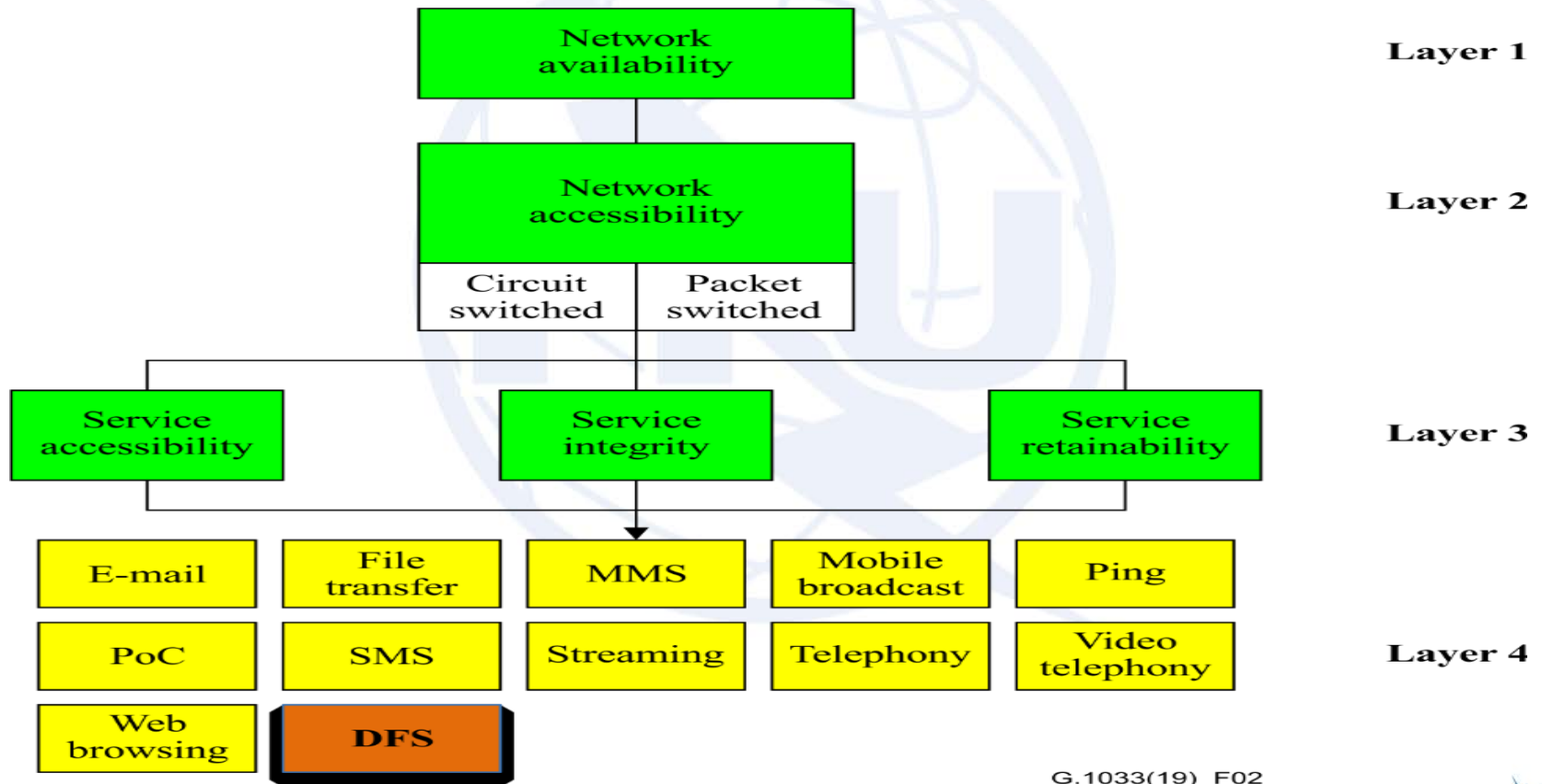
Hierarchy of use cases, types & macroscopic parameters



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Model for quality of service parameters

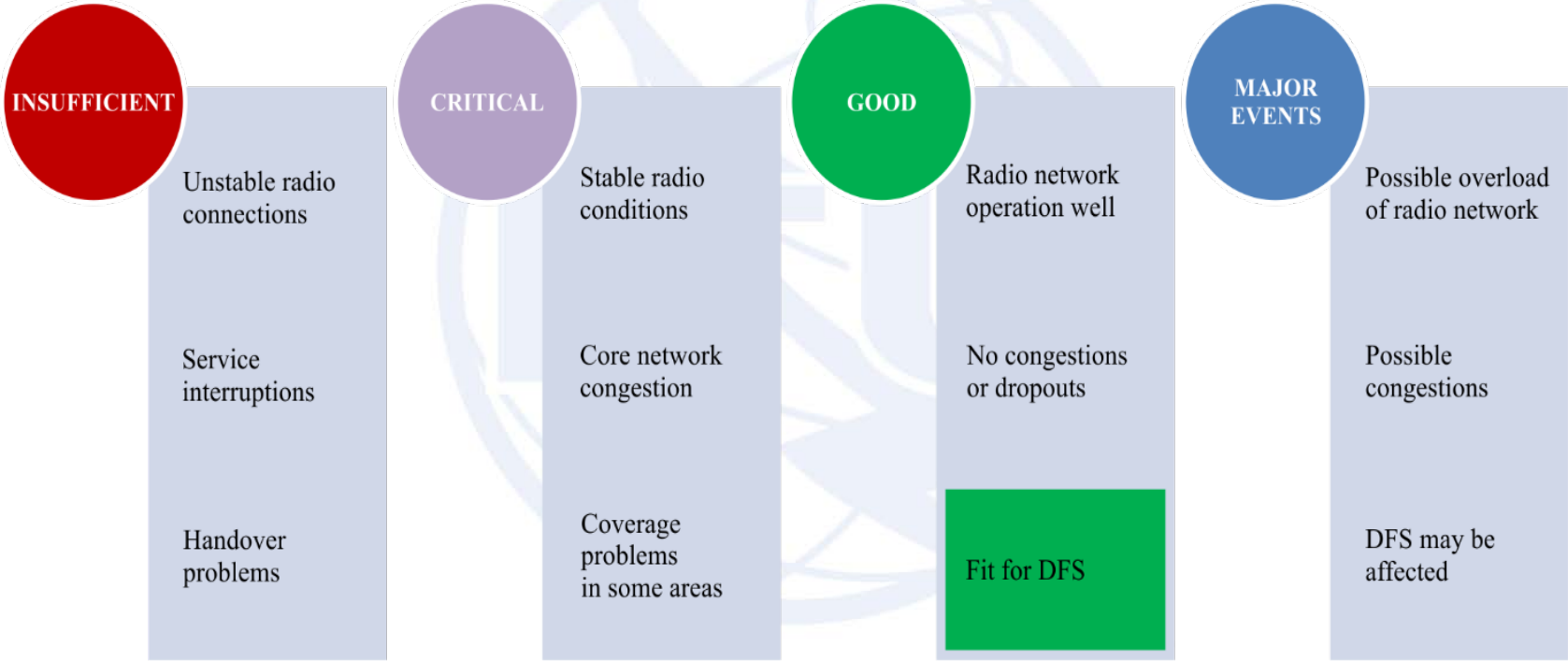


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Considerations related to the fitness for DFSs

- A successful introduction of DFSs via a mobile network requires fitness of the whole environment:
 - fitness of the mobile network, to provide a minimum level of availability and accessibility
 - fitness of the mobile network to provide the services required for realization of DFSs
 - fitness of mobile devices used, to support the basic services used to realize DFSs
 - fitness of the DFS service itself to provide useable interfaces
 - fitness of users to successfully use DFSs – this may include the necessary skills to operate DFSs on phones as well as basic understanding of properties of DFSs in general, to protect users against exploitation of insufficient knowledge
 - fitness of the general society and the governmental institutions for DFSs

Decision diagram for fitness of a mobile network for DFSs



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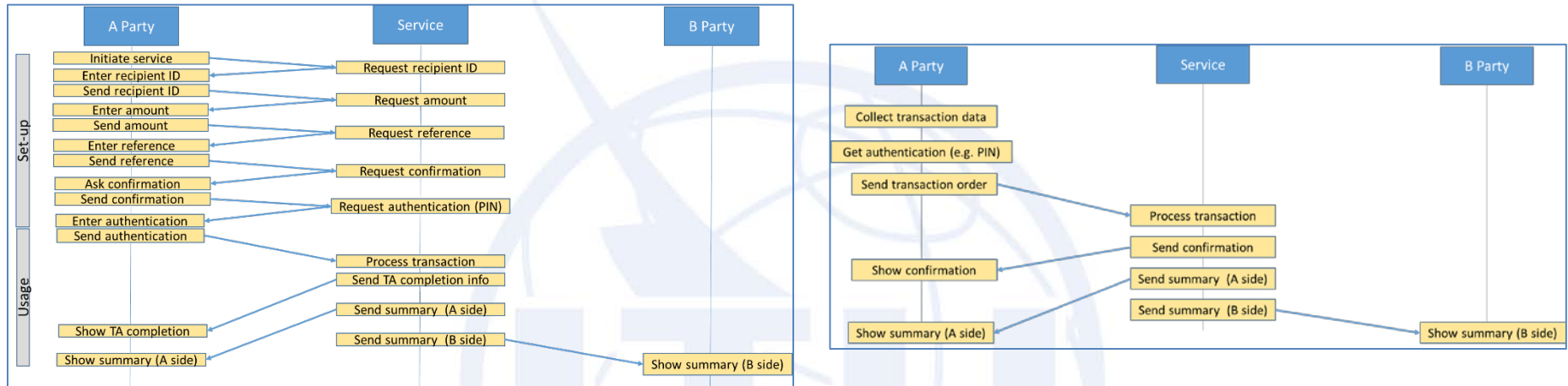
- [ITU-T P.1502:](#)
- *Methodology for QoE testing of digital financial services*
- *Approved January 2020*

- Recommendation ITU-T P.1502
 - describes the QoE assessment methodology for the use case “Person-to-Person” (P2P) money transfer
 - methodology is designed to be easily extended to other use cases
 - only covers the methodology for tests done from an individual user’s (end to end) perspective, acting within a given DFS ecosystem under current load conditions
- Desirable to extend the scope of testing to capacity tests
 - involve creation of defined load scenarios to a DFS ecosystem
 - determine the robustness of DFS functionality

Basic Concept: DFS QoS vs Carrier Service QoS

- If mobile network performance is dominant for overall QoS, proxies can be used to predict DFS end to end QoS which are easier to measure than actual end to end performance.
 - Performance of DFS specific infrastructure may vary over time but does not depend on (is not aware of) the user's location
 - Optimizing/bug fixing DFS subsystem performance can be assumed to be relatively easy (as compared to achieving good area coverage and service performance of a mobile network)
- Results for carrier service measurements provide guidance to regulators w/r to minimum required mobile network performance

End to end QoS KPI



- Left: Detailed sequence of events for a DFS transaction
 - Component events may not be visible on the user interface, and/or required level of time resolution may not be achievable for human observation
- Right: Simplified sequence, only key events

Outer conditions

- Direct observability
- Circular money flow
- Subsequent design of DFS test
- Background tests
- Requirements to equipment in the field
- Robustness and repeatability: Design of data handling and data quality assurance
- Special focus on identification and compensation of artifacts caused by “human errors”

Way forward on QoS and QoE of DFS

- Continuation of work on QoS and QoE aspects is undertaken by the Financial Inclusion Global Initiative (FIGI)
- Standardization of QoS and QoE aspects is in progress in ITU-T Study Group 12 (SG12)

Way forward in general

- Extended scenarios
 - Areas with poor or very poor coverage
 - Mobility (e.g. user in public transport vehicles)
- Additional use cases
 - Interoperability: e.g. national between different DFS operators, international
 - Transfer between mobile and fixed accounts
 - Bulk payments to multiple accounts (e.g. G2P)
- Toolset Expansion
 - App-supported time-taking (including automated upload of data)
 - Standardized data evaluation
 - Automated testing
- Extended range of platforms
 - Dedicated devices (e.g. IoT or Low Power Network based)
 - App-based implementations (e.g. secure transactions)

Way forward in SG12

- Proposal of a new Study Question for the next Study Period (2021 – 2024)
- Increasing visibility of the topic
- Attracting active participation of ALL stakeholders:
 - End customers
 - Businesses
 - Network operators
 - DFS operators
 - Governments/Regulators

Proposed text for a NEW study question on DFS in SG12.

- The proposed new Study Question for Study Group 12 is an essential asset to ITU-T SG12 in the forthcoming Study Period in order to maintain visibility and leadership in the field of Quality of Service and Quality of Experience of Digital Financial Services (DFS)
- Already 2 Recommendations related to DFS have been approved by SG12 and a clear need for more Recommendations relating to the various aspects of DFS can be identified
- In order to keep up this momentum it is proposed to assign a new study question to ITU-SG12

Proposed new Q.DFS/12: “Perceptual and field assessment principles for QoS and QoE of DFS”

- **Motivation**

As the QoS and QoE of Digital Financial Services turns out to be one of the most critical in the developing digital society, there is an increasing importance to continue the support to the global community with the extension of appropriate methodologies for DFS quality assessment both in perceptual considerations and in the field assessment.

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- When several stakeholders, both of the financial and the telecom sectors work together to provide end-to-end DFS solutions or applications, each needs to understand how to achieve the end-to-end performance objectives. Such objectives must be both adequate for the service being offered and feasible based on the available networking technologies.
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- A framework is needed to guide the development of Recommendations for performance aspects of Digital Financial Services including those supported by the emerging and heterogeneous infrastructure. Such a framework is also essential for relating performance.
- Other Questions, ITU Study Groups, and some Standardization Bodies should expect that unique needs in the area of Digital Financial Services will be satisfied by this Question’s work, so that they can continue with their work plans without overlap.
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- The Question will be provide the necessary support to produce field test and processing plans to execute appropriate tests of DFS.

- **Question**

Study items to be considered include, but are not limited to:

- General and cross-technology performance studies
 - How should the generic measurement points, reference events, communication functions, performance outcomes, and performance indicators be defined for different DFS scenarios and for different DFS implementations
 - How can the measurement of DFS be coordinated, to address the issues and complexities associated with large network scale?
 - Which layer(s) or other conventions have end-to-end significance in specifying performance of DFS?
 - What reference events will be available to define performance indicators for these networks?
 - Which scenarios, performance indicators and statistics should be standardized for such networks?
 - How can complex topologies be assessed, e.g. topologies including multiple endpoints or solutions linking DFS with traditional banking scenarios such as checking accounts?
 - What QoS levels will be needed by the services supported on these networks?
 - How will the end-to-end QoS objectives for DFS be achieved when more than one network participates in the provision of communications?
- What new test plans are needed to evaluate (subjectively) end-to-end DFS over fixed and/or mobile networks ?

Supporting Organizations for new Q.DFS/12

- Senegal (ARTP)
- Germany (pending a formal industry commenting phase...)
- ...
- **YOUR organization ?**
 - **Please contact us by email**
 - **Identifying the formal support and the required details**

Thank you for your attention. Questions?



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