

# Multipath-DCCP request for WG adoption

<https://tools.ietf.org/html/draft-amend-tsvwg-multipath-dccp-05>

Markus Amend, [markus.amend@telekom.de](mailto:markus.amend@telekom.de)  
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LIFE IS FOR SHARING.

# Use cases and community interest

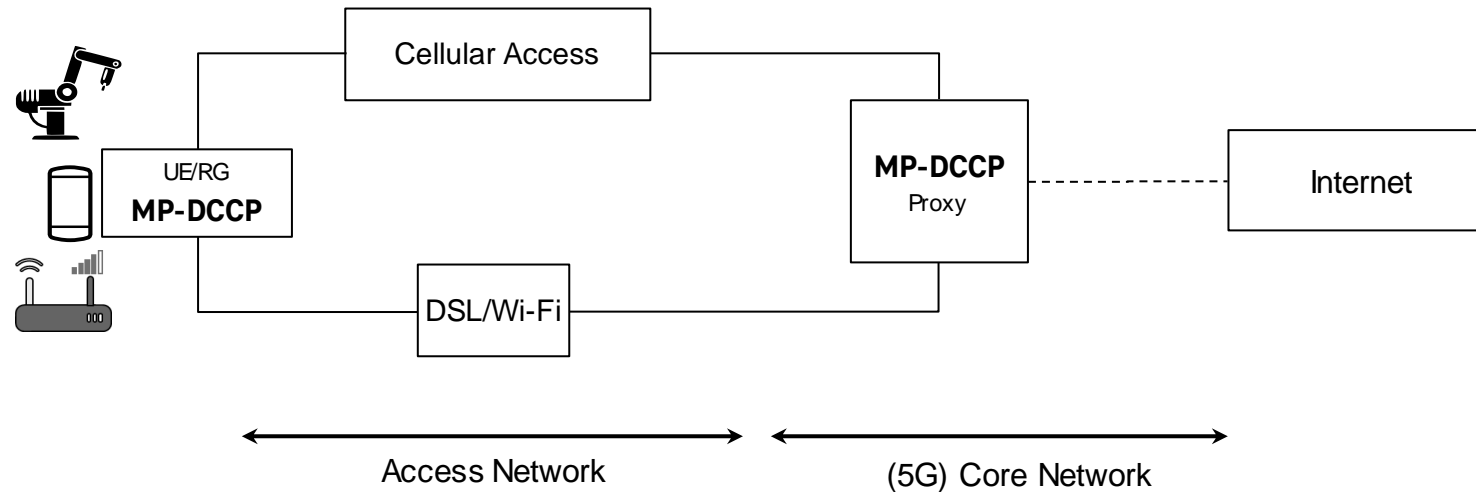
**MP-DCCP offers lightweight Steering (selection), Switching (handover) and Splitting (aggregation)**

- Multipath support for Hybrid access – for all traffic types (between RG and Proxy) and
- Multipath support for 5G-ATSSS – beyond TCP traffic

**GSMA LS on MP-DCCP WG adoption**

**3GPP LS to IETF requesting support for non-TCP multipath transport**

**Strong interest from operators and vendors communicated on TSVWG mailing list**



# Support, Reviewers and changes since last IETF

**Multiple institutions** individually sent their **interest** to the TSVWG mailing list and/or as expressed this as part of the formal [LS to IETF TSVWG on MP-DCCP](#) from GSMA...

**Open Source** Linux reference implementation available at <https://multipath-dccp.org>

**Draft-05** versions provides significant **updates** in handshake mechanism and filling empty sections

**Independent** implementations in different testbeds available in London (CUL, BT), Sweden (KAU) and at DT

**Existing IPR disclosure** will be updated to declare **lost relation** to MP-DCCP draft after EPO review process.

**Two paper at ANRW21** from the results of the MP-DCCP testbeds

**Offered Reviewers** as of now: Phil Eardley, BT; Kevin Smith, Vodafone; Francisco Fontes, Altice Labs; Carlos Bernardos, UC3M

Needs final confirmation: Giorgi Gulbani, Huawei; Marco Liebsch, NEC



# Conclusion

## Request for adoption

and **keep latest opportunity** to provide MP-DCCP as solution into the started **3GPP Rel. 18 ATSSS** discussion. Otherwise, the suitability of ATSSS for high quality customer connectivity is at risk of being implemented by operators.

Next To Dos right after IETF:

Update Open source implementation with

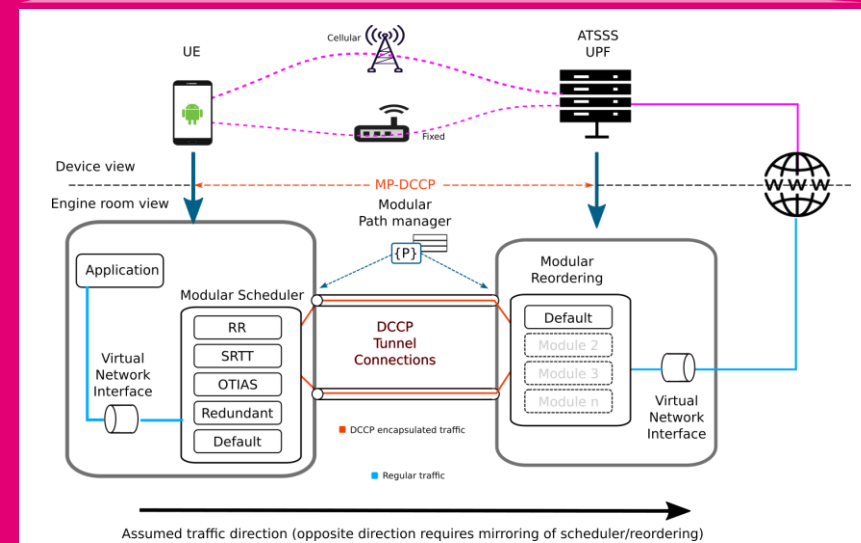
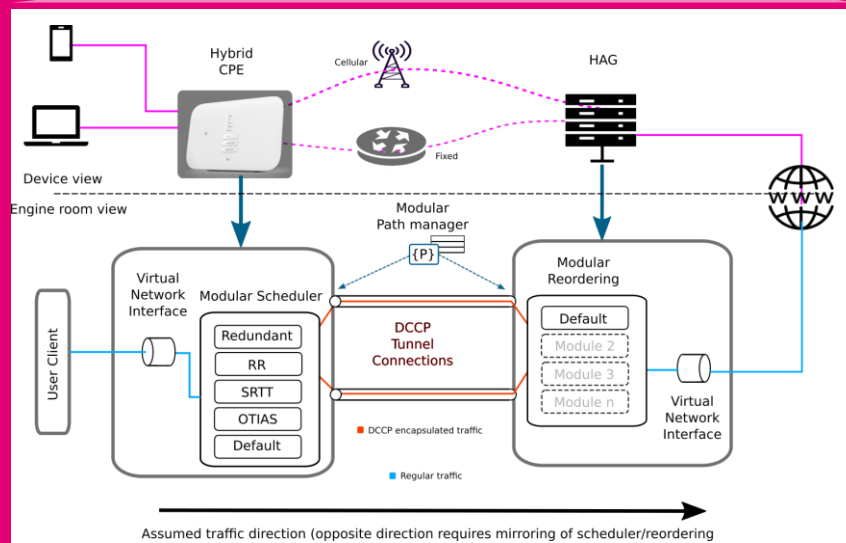
- draft-05 handshake mechanism,
- add new reordering mechanisms beyond the default one,
- path-manager re-establishments of subflows based on ICMP, keep alive and NIC status

**Backup**

# Multipath-DCCP for...

... providing multipath transport for latency sensitive services and/or services with no or less demand on reliable delivery and optional adjustable re-ordering.

While DCCP applications are natively supported, another approach is to provide multi-path transport for **UDP** or **IP** traffic in **Hybrid Access** and **5G ATSSS** architectures.



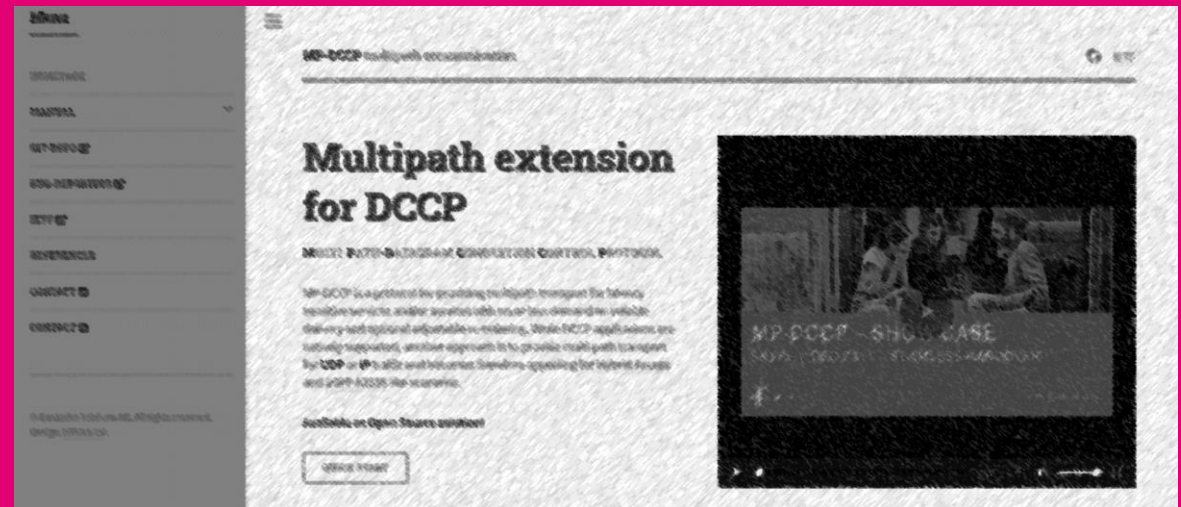
# Changes since IETF110

## draft-05

- **Revised MP\_KEY** option for unambiguously specifying the derived key (d-key) used for authentication of subsequent subflows. A learning from implementation!
- **Added** possible **use cases** for MP-DCCP to the abstract.
- **Updated the DCCP Multipath option number from 45 to 46** to avoid conflicts with the Quick-Start Response option specified in RFC5634 section 2.2.1.
- **Added content to the IANA considerations section**
- **Added implementation section**

**Open Source** Linux Kernel reference implementation

<https://multipath-dccp.org>



# Deployed Testbed implementations

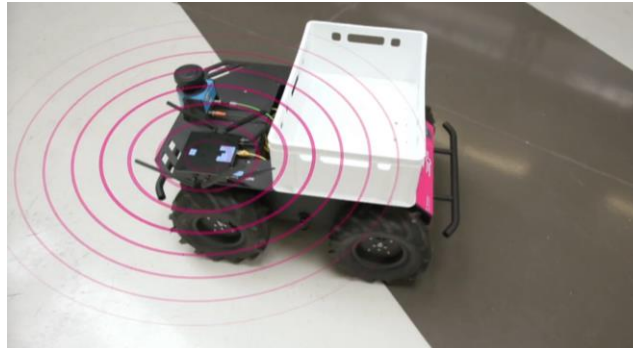
Karlstad, Sweden based on <https://multipath-dccp.org> and MP-DCCP user space

City University London/BT based on <https://multipath-dccp.org> within Android Kernel

**DT for pre-ATSSS (within Google Pixel 4), Hybrid Access (Linux based router) and CAMPUS with 5G SA core attached MP-DCCP Proxy supporting policy based Steering, Switching and Splitting.**

**DT CAMPUS setup with AGV and MP-DCCP GW**

[Press article](#)



**Two papers with results from these MP-DCCP testbeds presented at ANRW21**

- [CCID5: An implementation of the BBR Congestion Control algorithm for DCCP and its impact over multi-path scenarios](#)
- [Adaptive Cheapest Path First Scheduling in a Transport-Layer Multi-Path Tunnel Context](#)