



ENHANCED ANDROID CONNECTION MANAGER

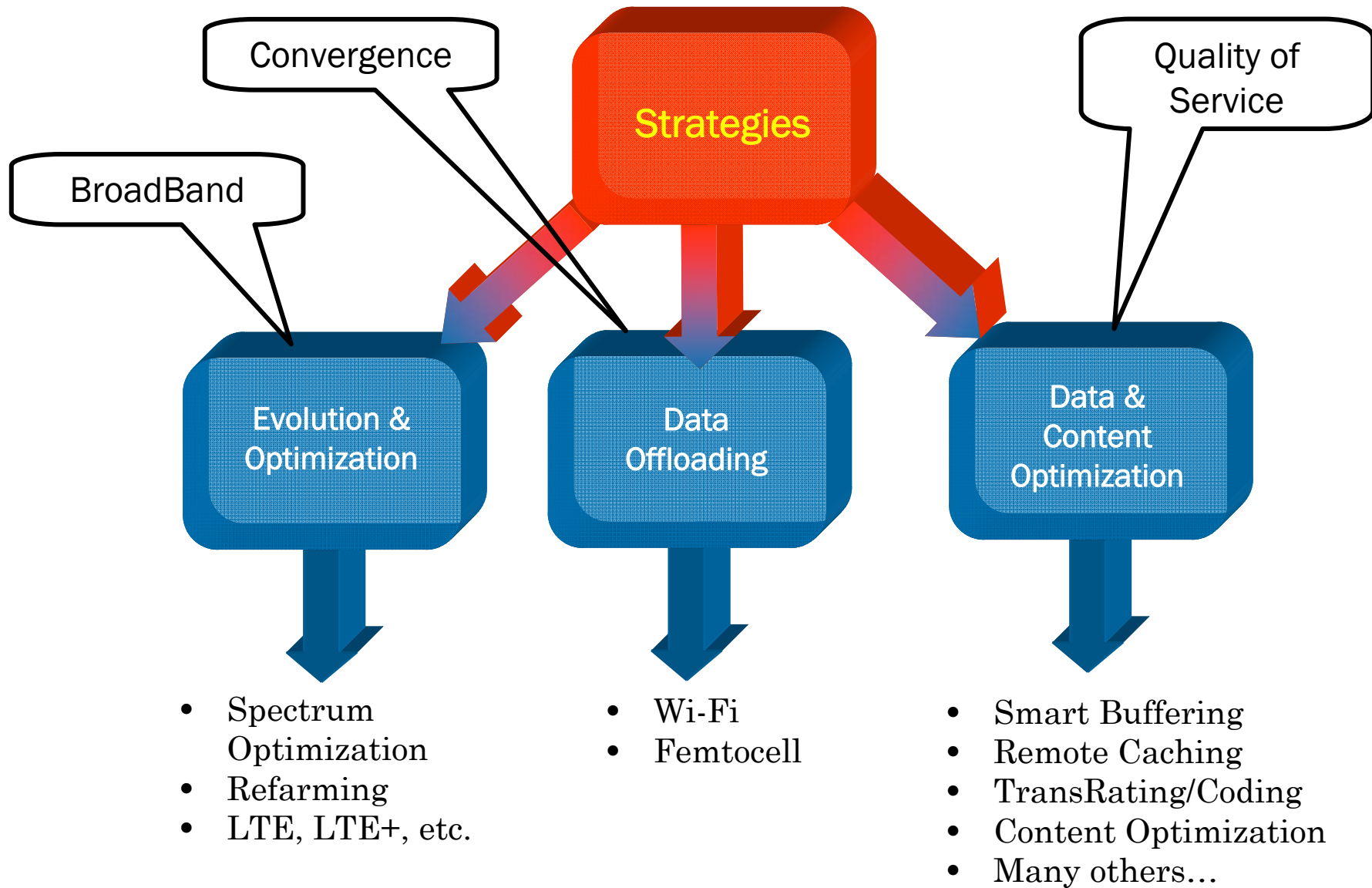
An Application-based Solution to Manage Mobile Data Traffic

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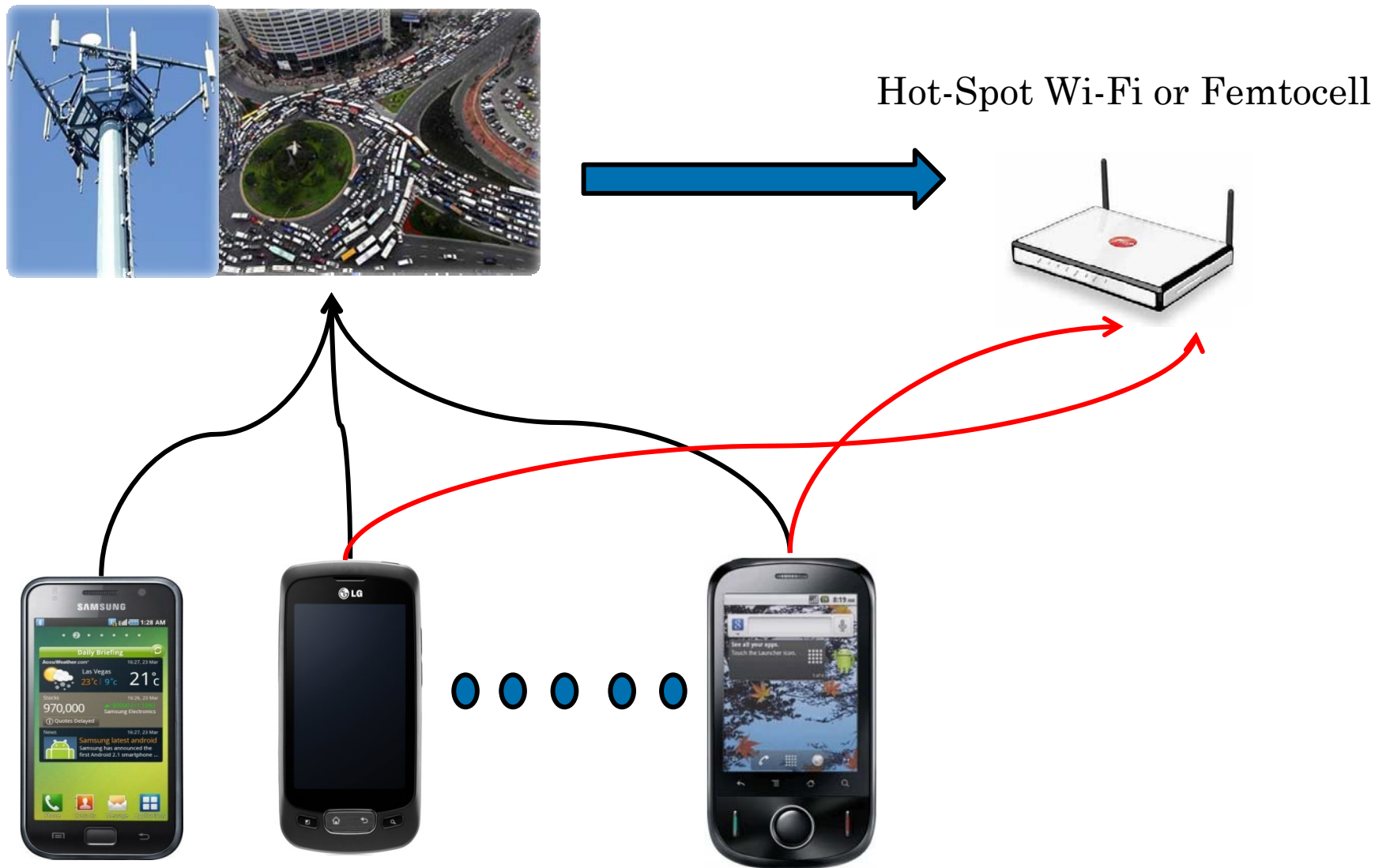
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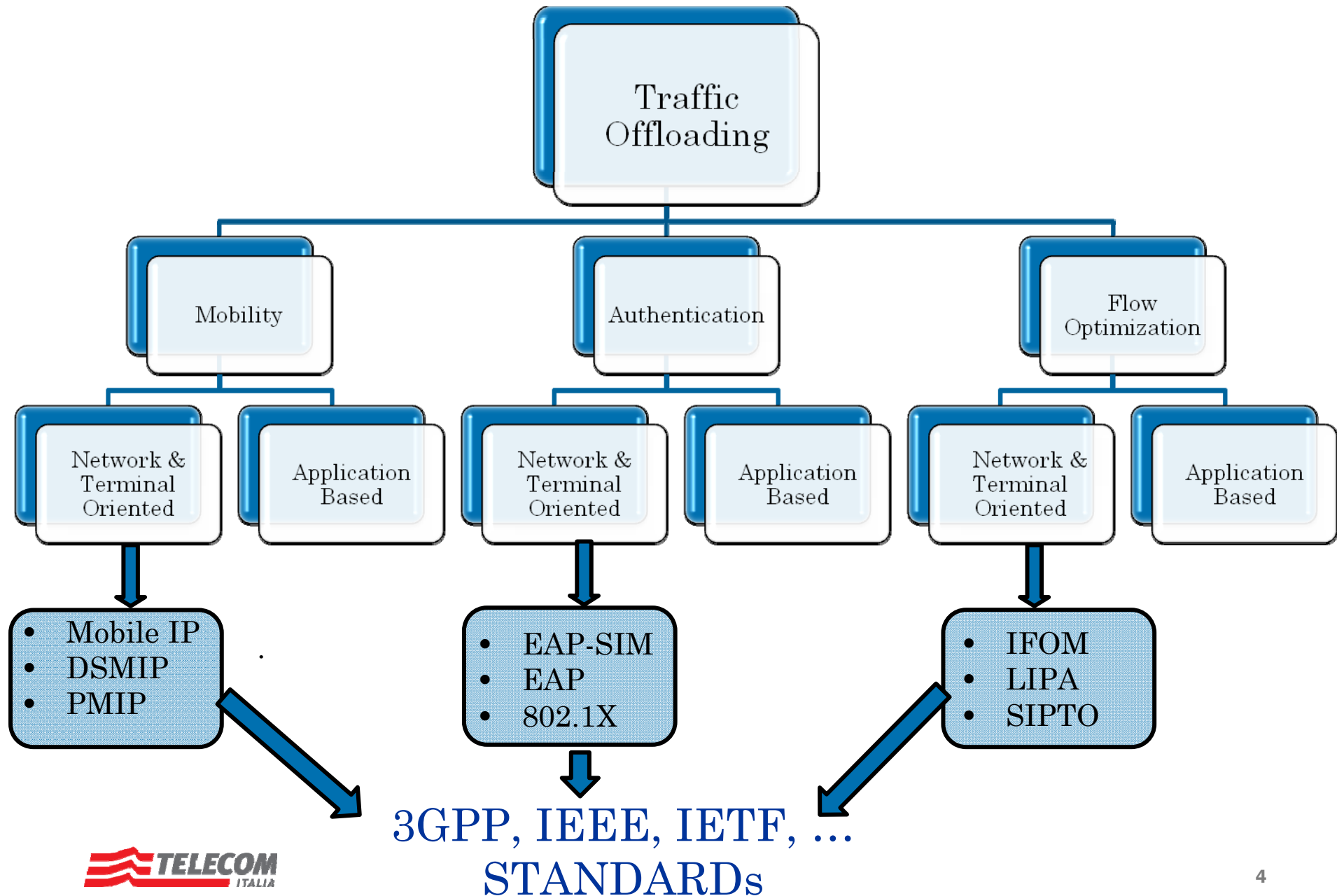
Network Evolution



Mobile Data Offloading

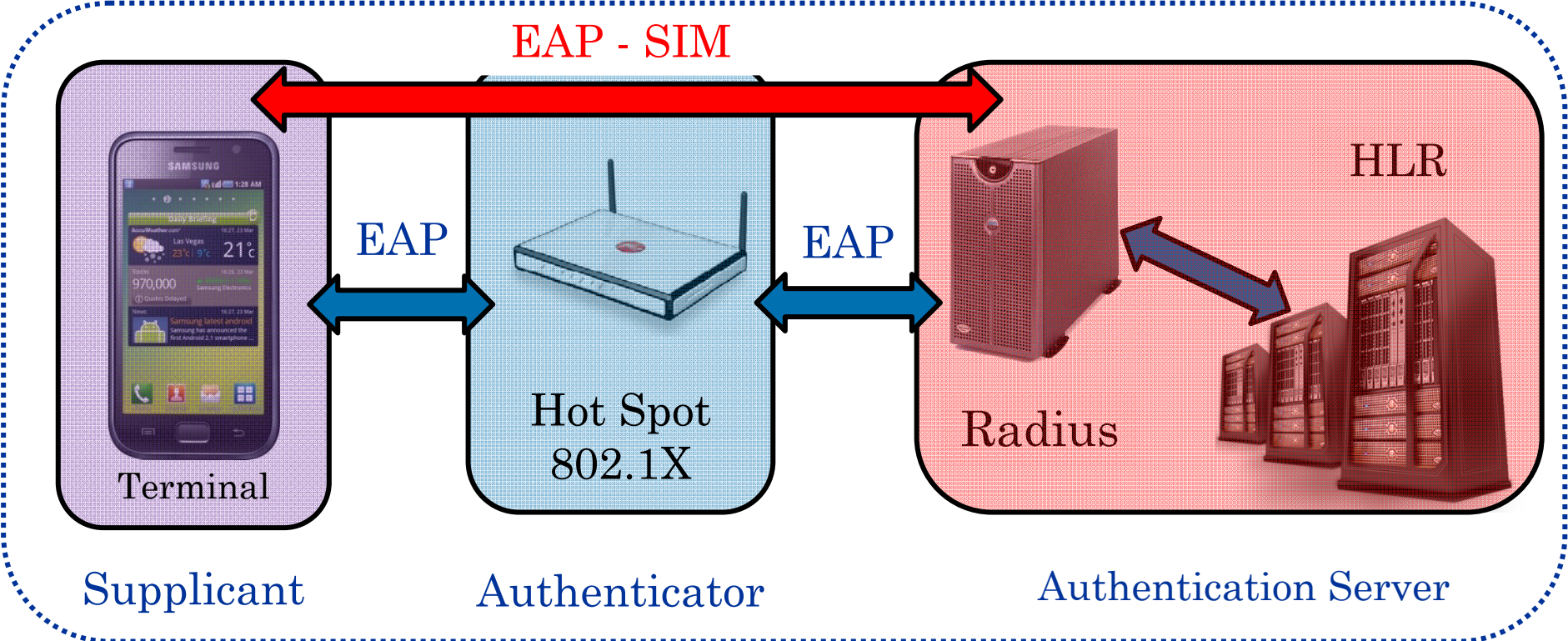


Offloading Strategies



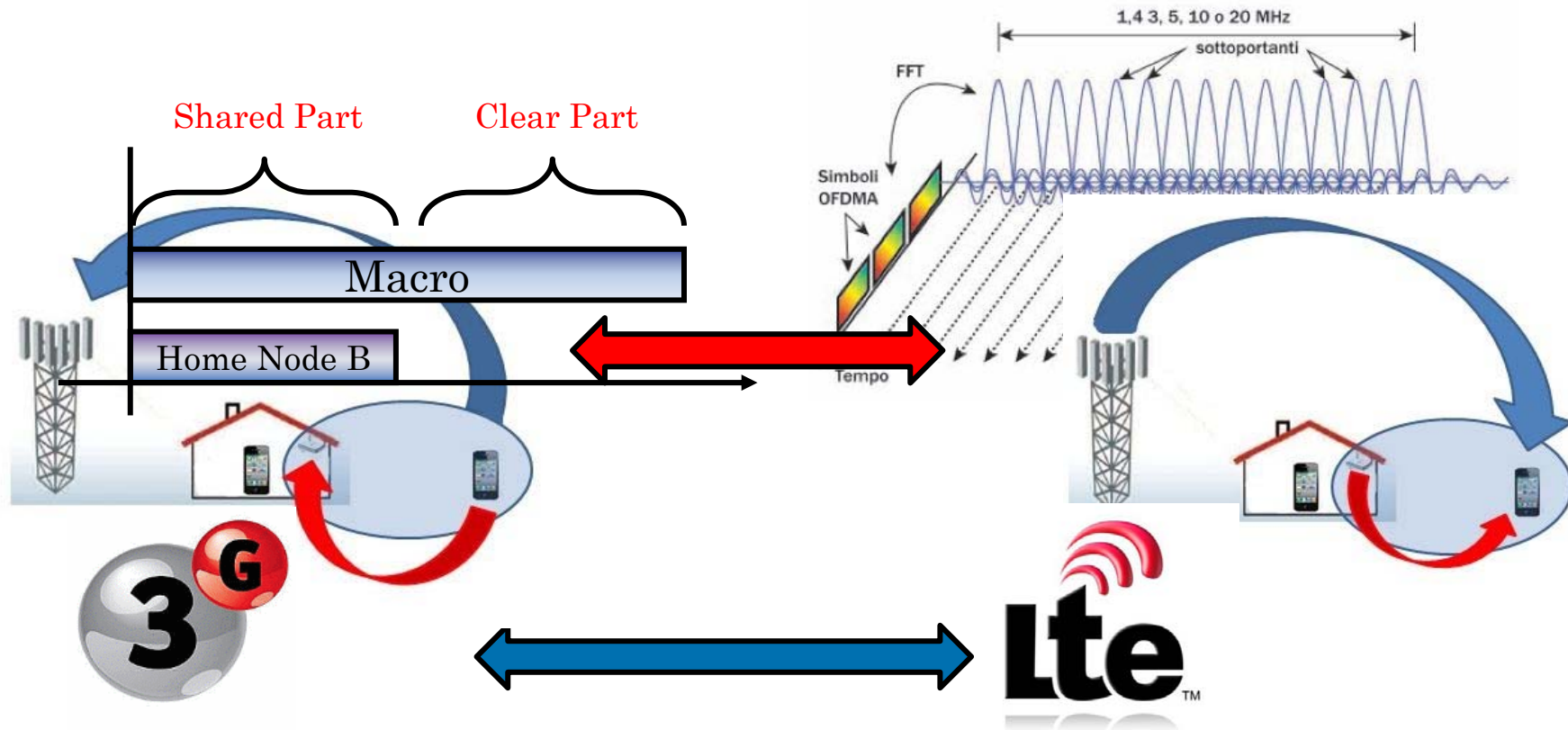
Wi-Fi Sim-Based Authentication

802.1X / EAP / EAP-SIM



Femtocell & LTE

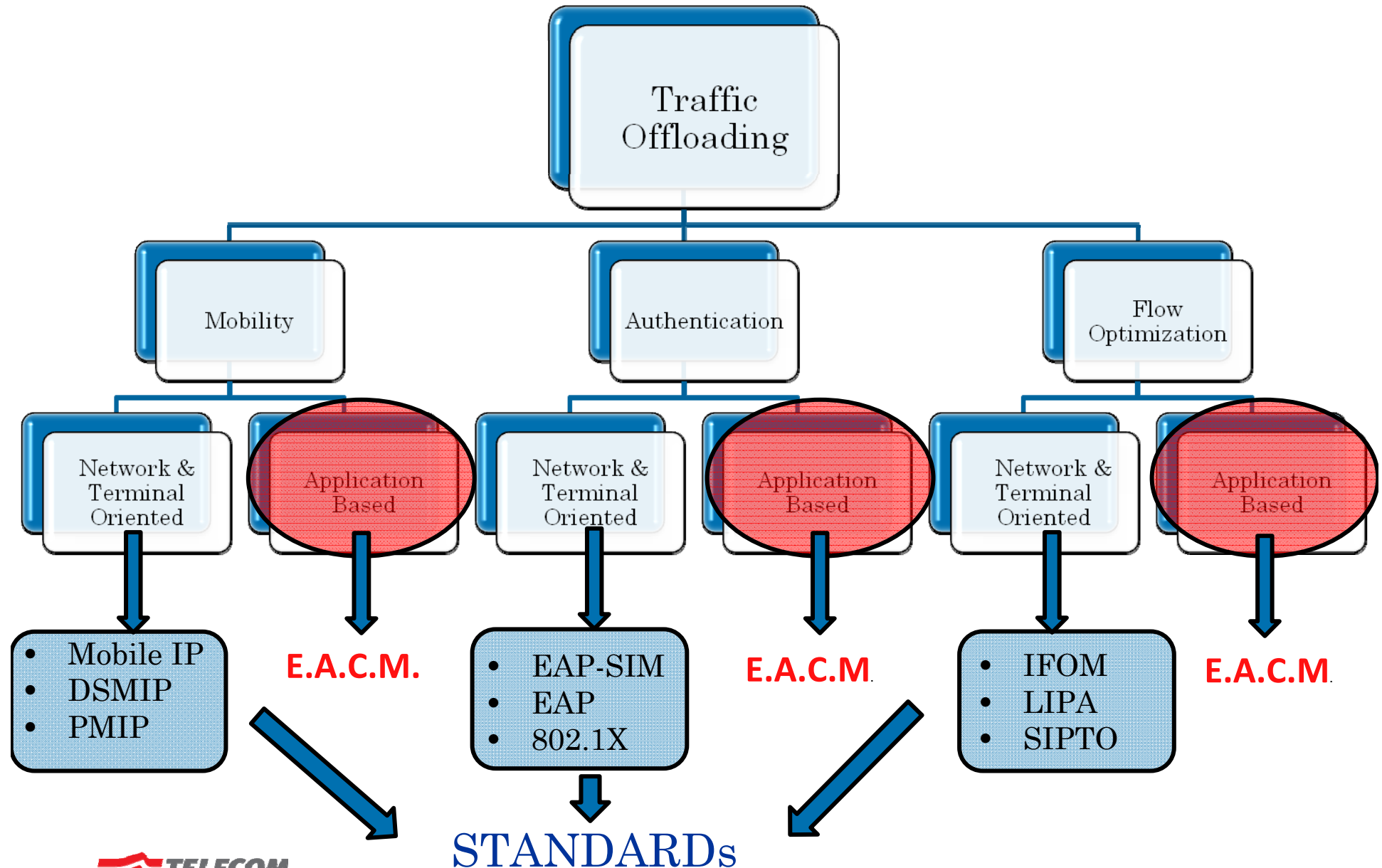
- ❑ Interference between Femto and Macrocellular radio access



Interference Macro-Femto

Interference Femto-Macro

E.A.C.M. Strategy to Traffic Offloading



E.A.C.M. Requirements & Features

- ✓ “Downloadable“ application/library, must work with standard handsets without needing firmware customization or Root Access
- ✓ Transparent to user and other applications: extend the default connection manager without affecting standard functionality
- ✓ Must Handle simultaneous connections to WiFi and Mobile Networks
- ✓ Functions Shared among multiple concurrent Applications using APIs
- ✓ Allow per-IP access rules defined by Applications or User



Mobile Access Network
or Femtocell



Wi-Fi Hot-Spot



Route & Unroute

Route(...);

Unroute(...);

URL List

- www.virgilio.it
- openlab.telecomitalia.it
-

Application Package



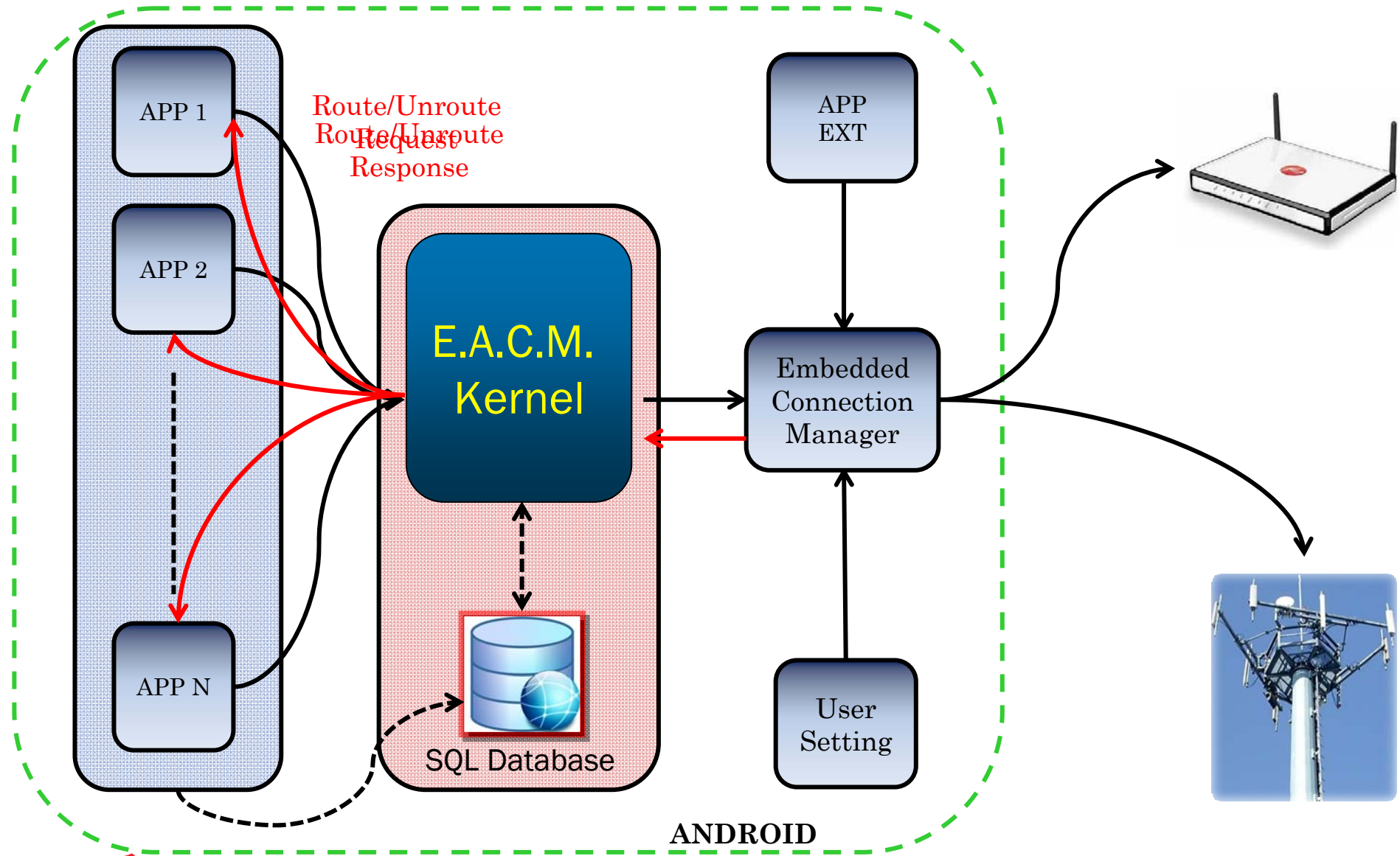
Key



APN o Hot-Spot



E.A.C.M. Android Architecture



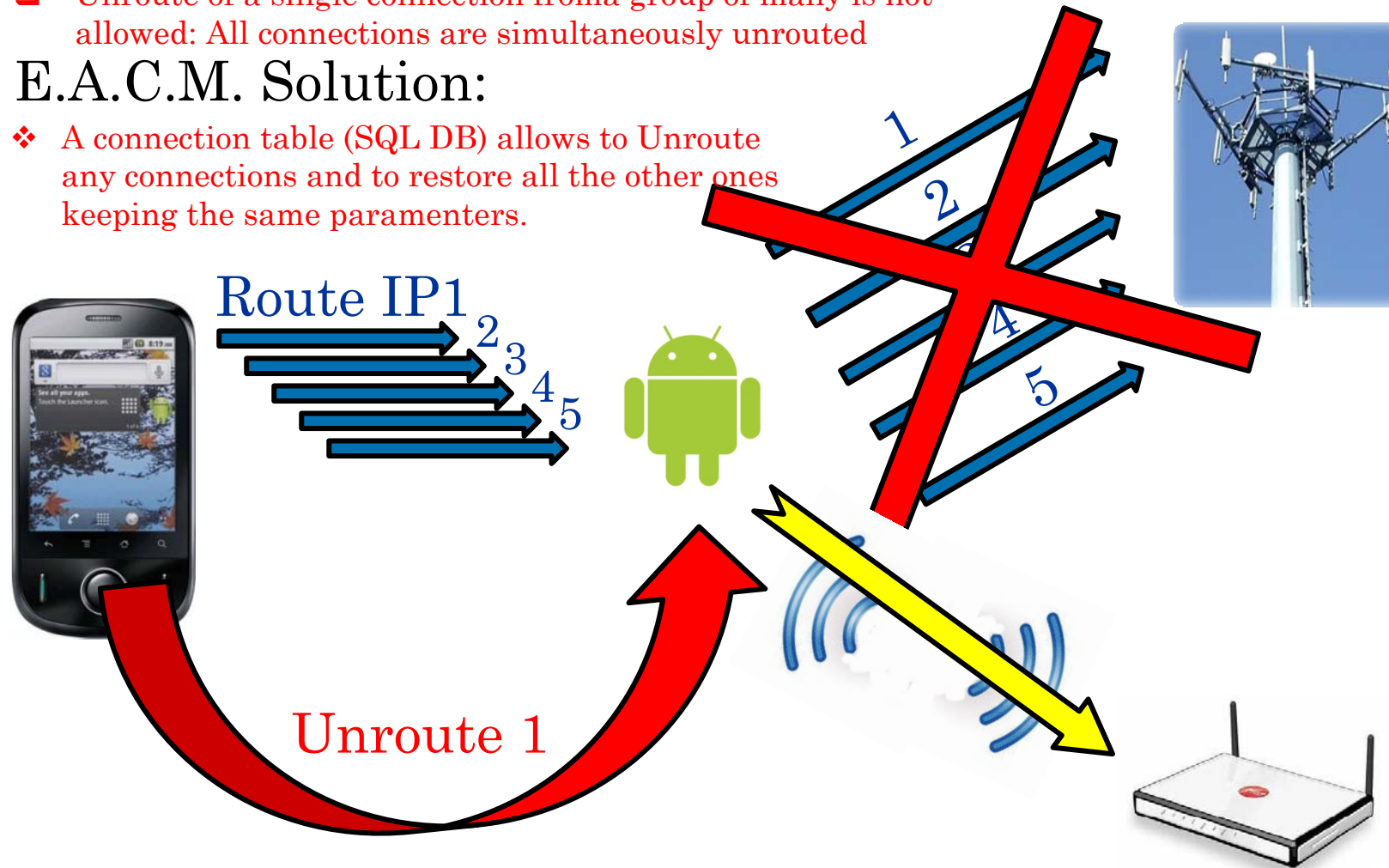
Android and E.A.C.M

Android restriction:

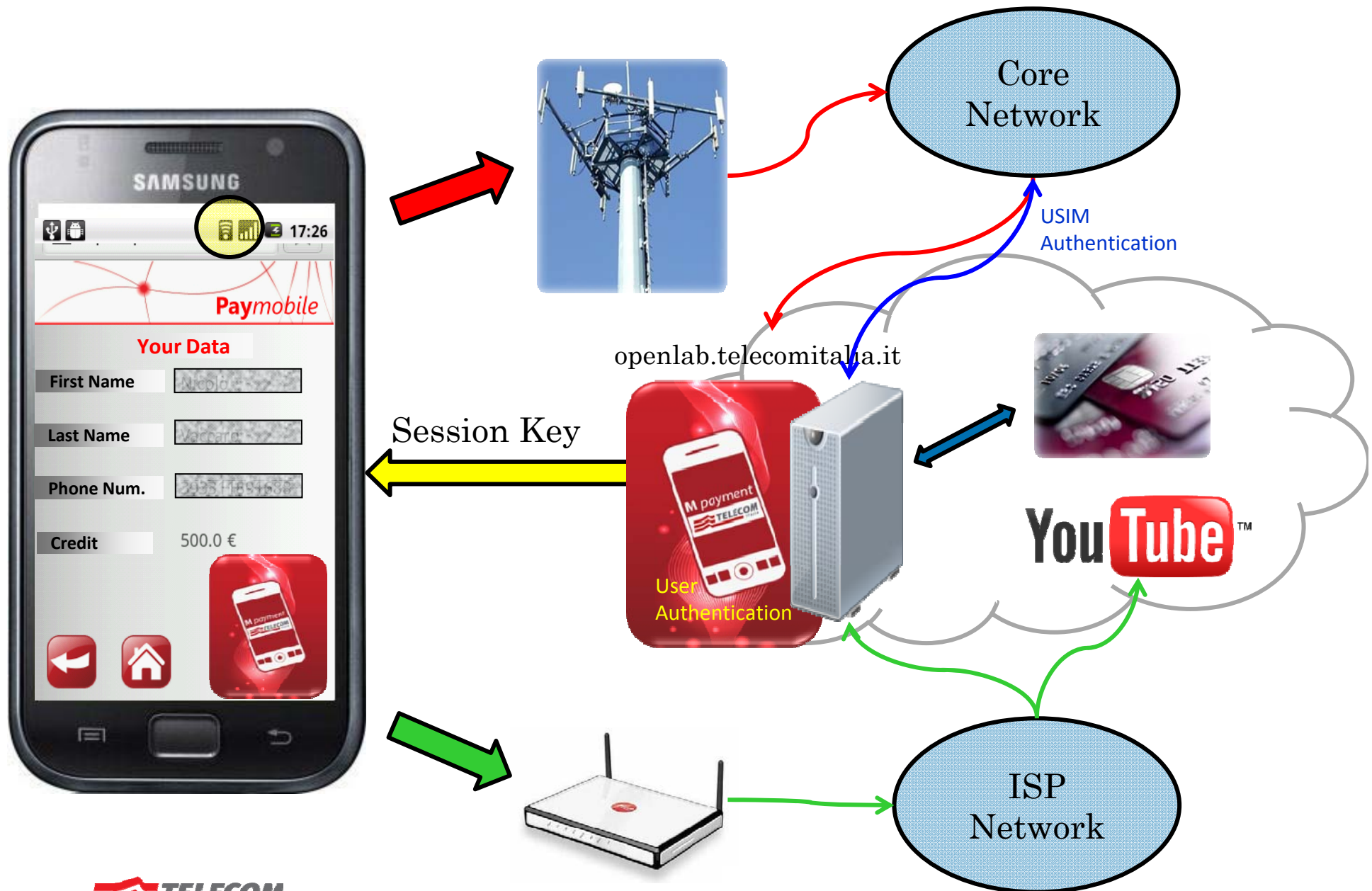
- ❑ Unroute of a single connection from a group of many is not allowed: All connections are simultaneously unrouted

E.A.C.M. Solution:

- ❖ A connection table (SQL DB) allows to Unroute any connections and to restore all the other ones keeping the same parameters.



Service Authentication Test



WiFi Authentication Test

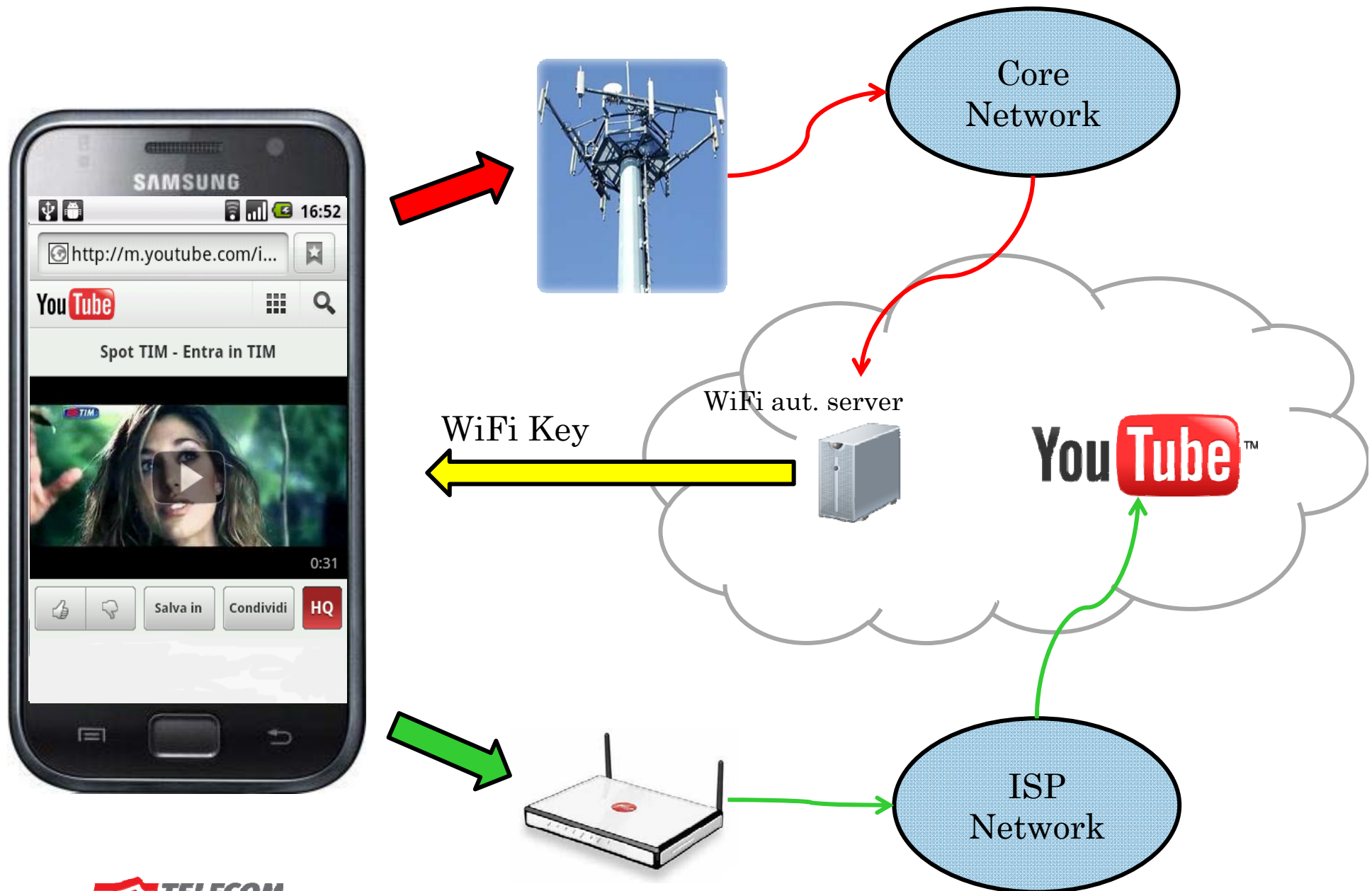
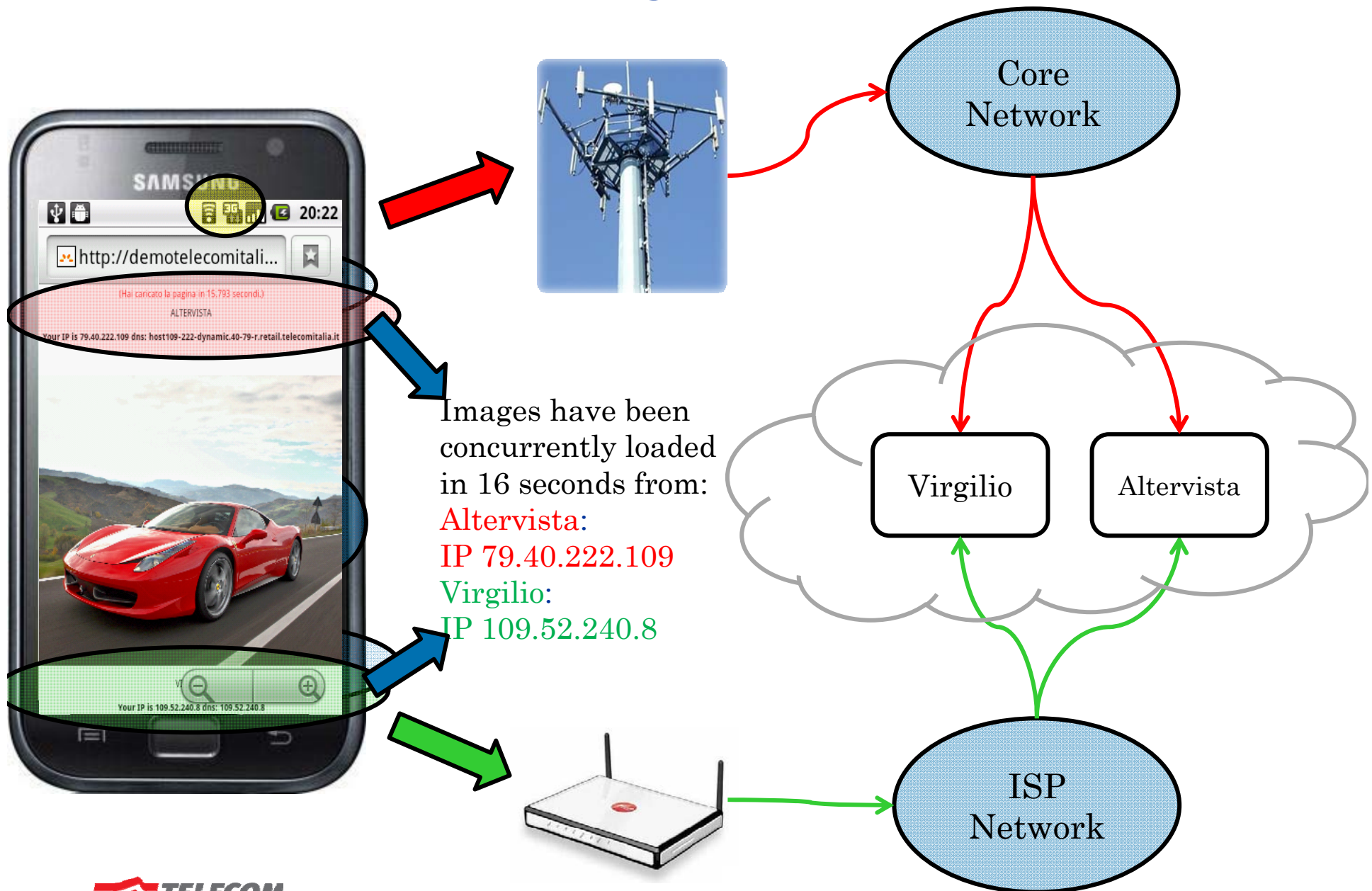
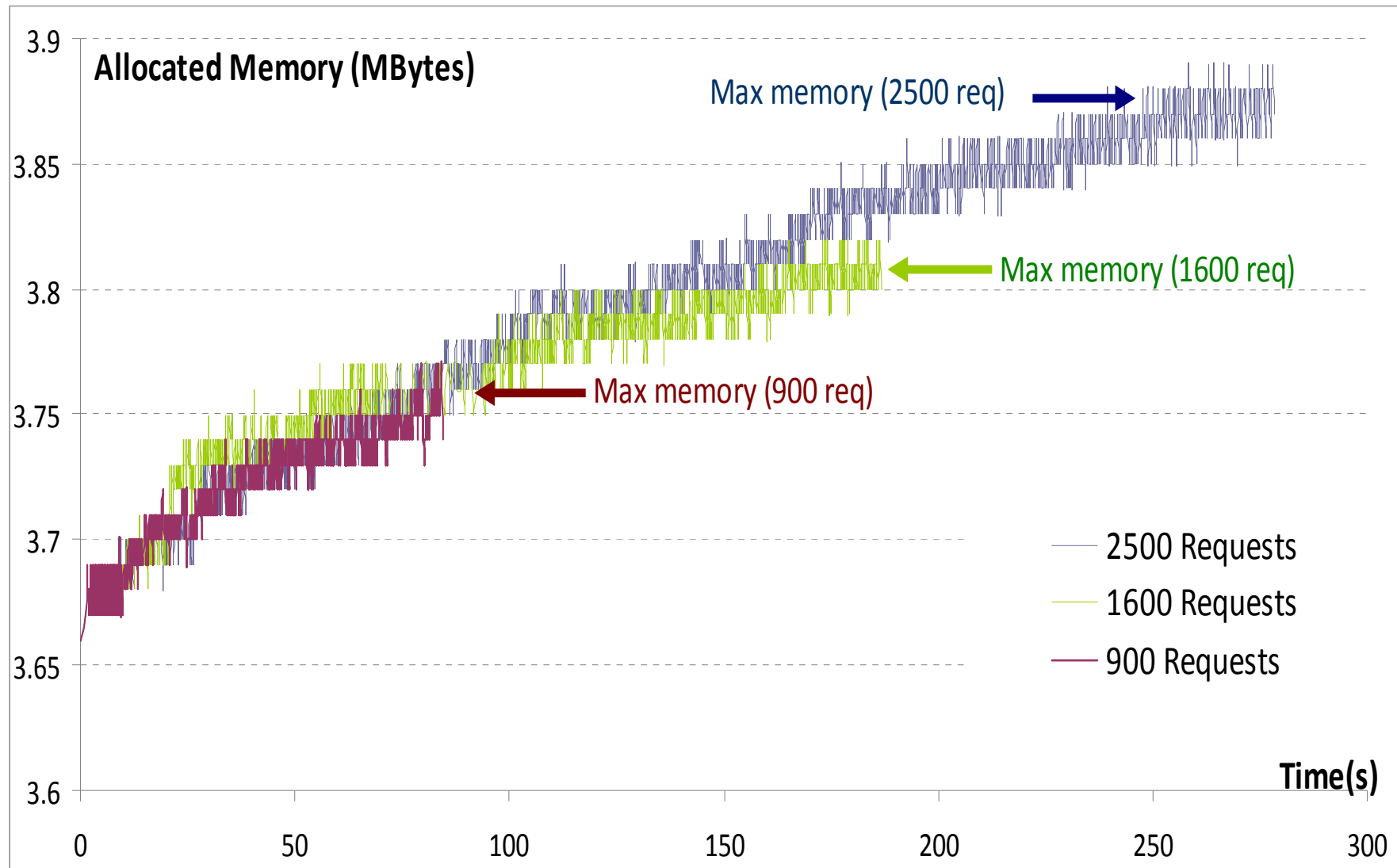


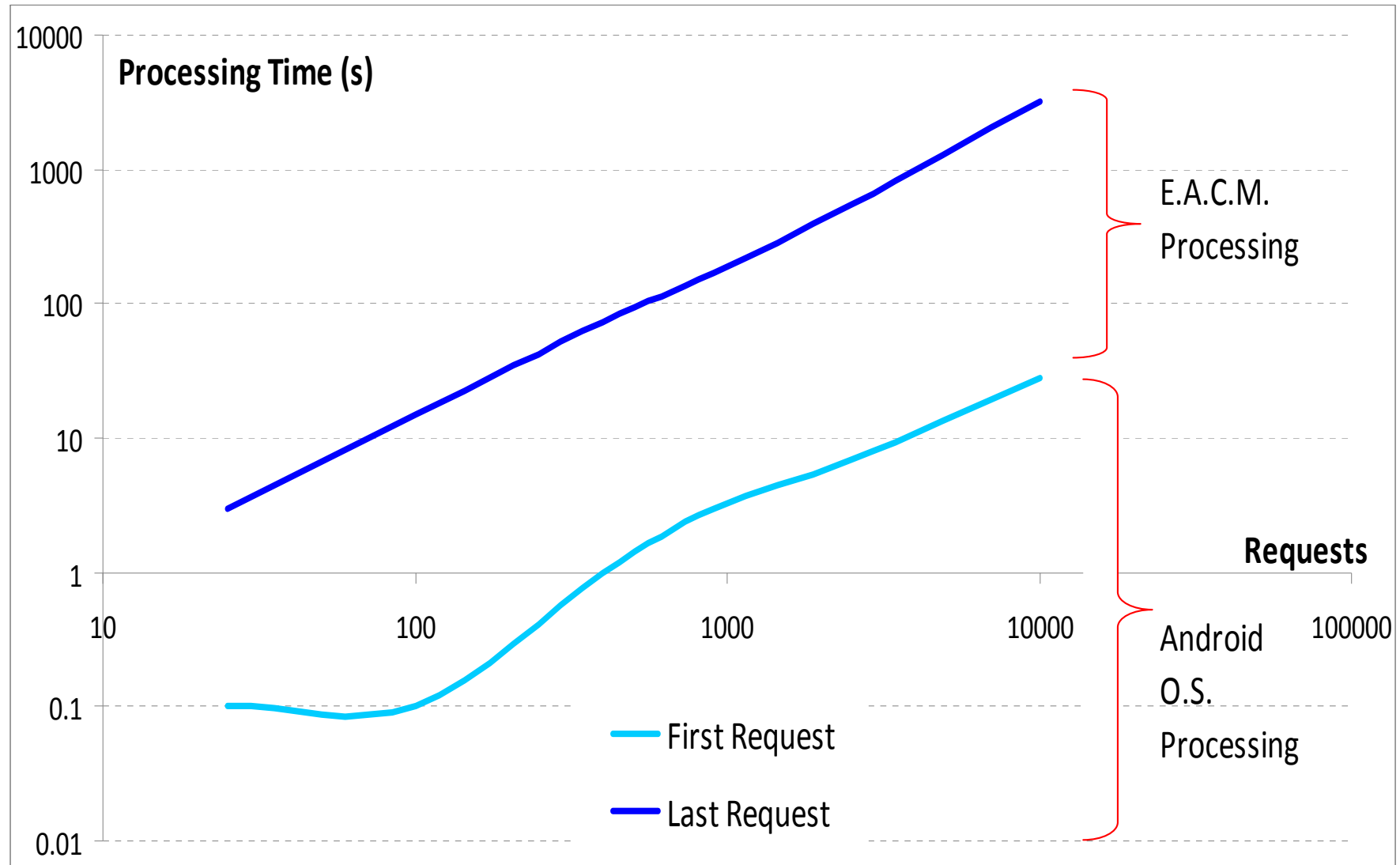
Image Test



E.A.C.M. Stress Test: Memory Allocation



E.A.C.M. Stress Test: Processing Time



E.A.C.M. Stress Test: Memory & Time

