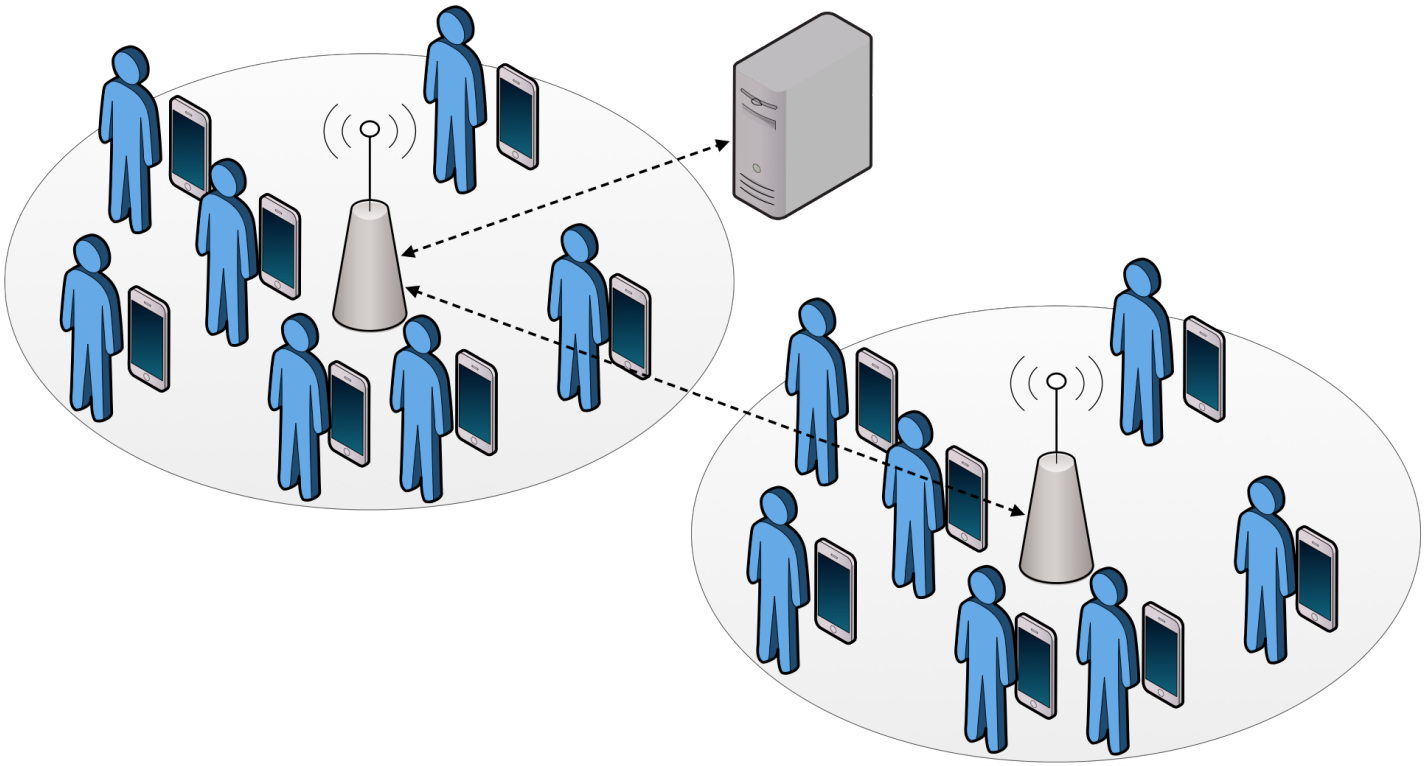
Architectural meeting notes

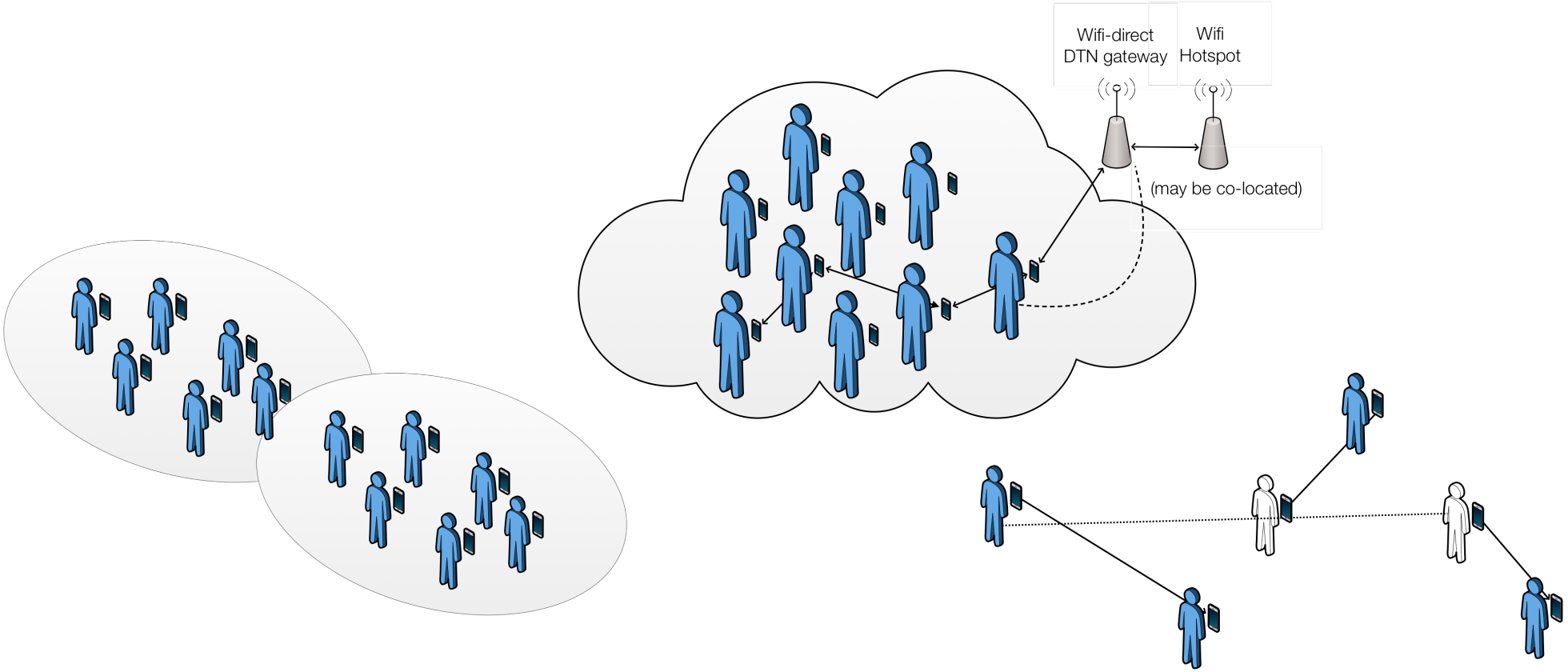
What kind of network contexts are we focusing on?

1. WiFi hotspots w/ or w/o back haul internet connectivity



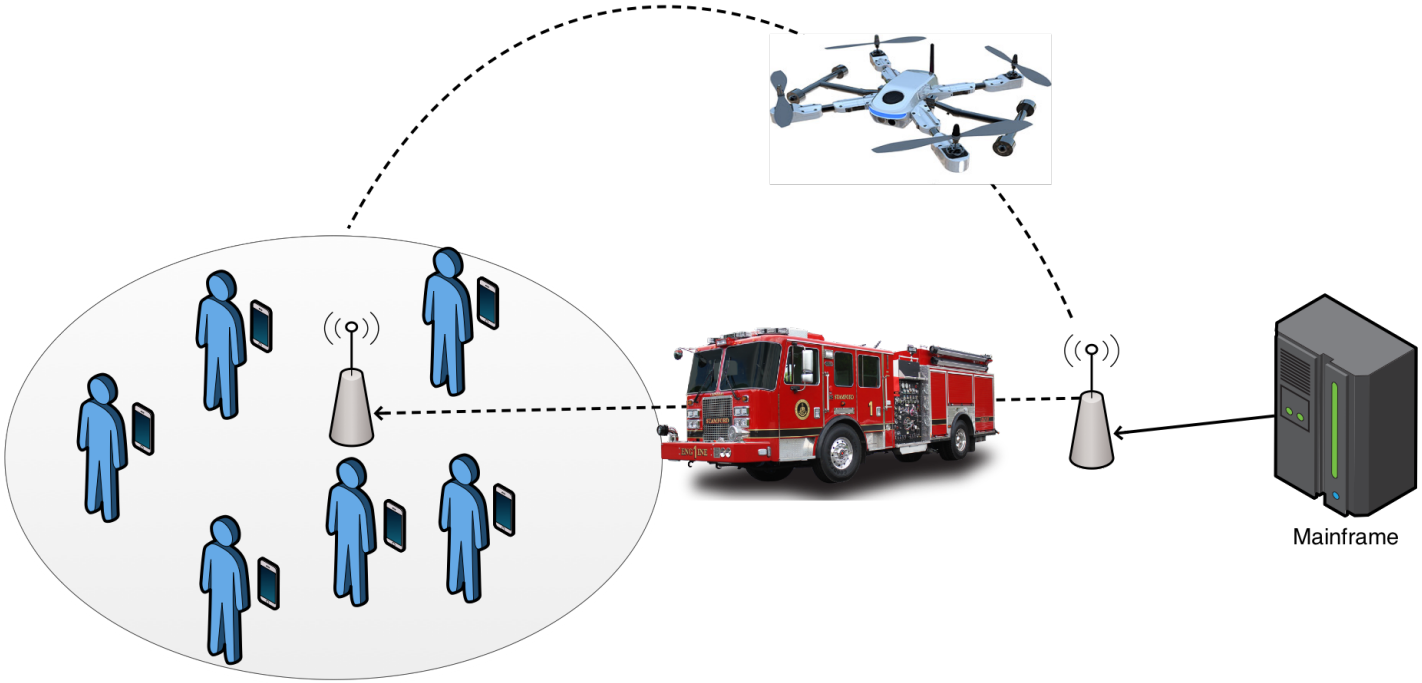
What kind of network contexts are we focusing on?

2. Opportunistic networks based on WiFi-direct



What kind of network contexts are we focusing on?

3. Poorly connected/isolated areas

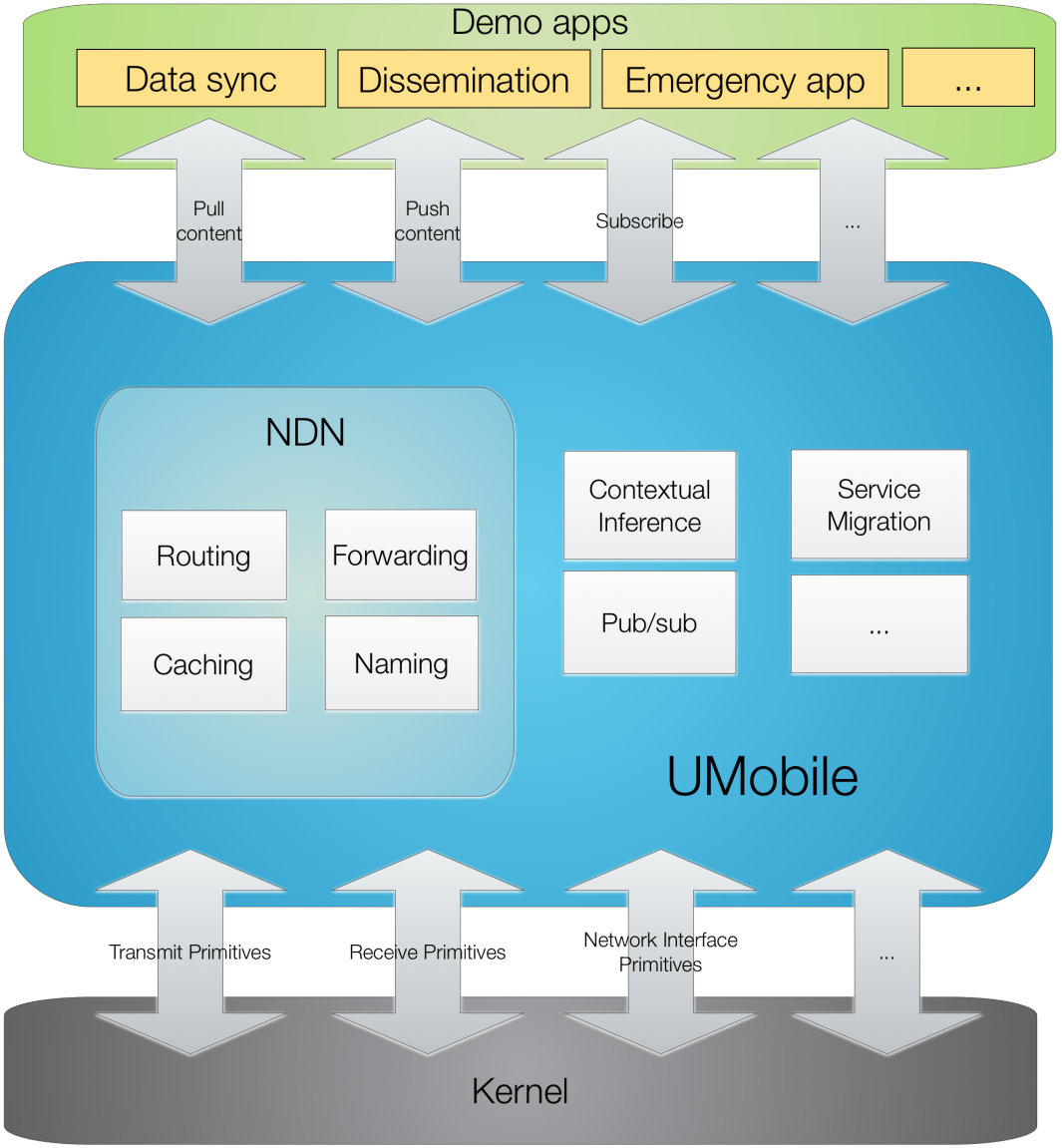


UMOBILE

ICN-DTN integration: Application/Service perspective

	Applications	Model	Network Services
Micro-blogging	- Recommendation (shopping, parking) - Local News (art exhibitions; road accidents) - Chat (music events)	- Pull - Pull - Pull	- Local Wi-Fi connectivity (on festival) - Data synchronization (chat on festival)
Emergency Situation	- Instant messaging (send info to any authorities: fire); -Emergency channel (e.g. info about safety places) -Chat (family; school; community)	- Push - Pull - Pull	- Data synchronization (status on emergency data) - Local Wi-Fi connectivity (on emergency area) - Data pre-fetching (fast replies)
Civil Protection	- Daily routine app (going around a crowd) - Chat (communication to home) - Emergency channel (e.g info about safety places)	- Maybe Pull - Pull - Pull	- Data fusion (satellite, sensors, UAVs) - Local Wi-Fi connectivity (on affected areas) - Data pre-fetching (fast replies)
Social Routing Improvement	- Recommendation (places; restaurants; lodging) - Instant messaging to specific people - Daily routine app (avoid social isolation; improve collective behaviour)	- Pull - Push - Maybe Pull	- Detection of affinity networks - Gathering of data about physical surroundings and social context - Behaviour inference

UMobile platform: an overview



Remarks

- Based on NDN
- Include a DTN Face (based on RCF5050)
- Include an Wi-Fi direct Face
- Change NDN forwarding engine (NFD) to work over opportunistic networking settings
- Update NDF to support push model: i) by using Interest msg; ii) by exploiting name prefix dissemintion
- Modify existing NDN modules
  - ChronoSync for data/service synchonization
- Develop new modules
- Roaming and usage patterns (e.g. Data consumption)

How do we proceed?

Short term (next week):

-Create UMobile platform "state diagrams" for sending, receiving, forwarding application data (e.g. what happens inside the UMobile platform from the point it receives application data from an application until it presents them to the Operating System) for each of the application type identifies in the UMOBILE use-cases (c.f. Slide 5): Chat, instant Message, Recommendations, News, Emergency Channel, Daily routine

-Extend functionalities from a network perspective (there can be multiple state diagrams for one application based on implementation phases)

-Basic input for D3.3 and D2.2 (first we tackle D3.3 – M12 – and then we update D2.2 based on it)

Medium term (next weeks):

-Infer interrelations between UMobile modules, design APIs

-Basic input for D3.3

Long term (next months):

-Implement and integrate

-Basic input for D3.1

Task distribution

- Naming: UCL, DUTH, COPELABS
- Starting point: NDN hierarchical scheme + keyword based kebab
- Action point: check the right naming for each Umobile app (I still believe that naming is app dependent)
- Service migration: UCAM
- (in this case COPELABS involvement depend on the issues that we decide to highlight. IMO the novelty is on the distributed service mng and not on the service deployment). If this is the way to go, COPELABS may be interested)
- Forwarding: Tecnalia, COPELABS, DUTH
- Starting point: NDN forwarding Daemon (NFD)
- Action points: create a opportunistic NFD – this is what we started to do in the IEEE Commag paper based on SCORP; include a Wifi-Direct face; include a DTN face; include support for Push model
- Context plane: Senception, all
- It was mention a set of modules that will implement the context plane (c.f. photo sent by Sergi), which are optional, but should augment Umobile functionality – trust circles, friend groups, location tracking, roaming patterns, reputation. We need to understand which partners will be involved to do what modules.
- AP research: AFA
- Action points: Wi-Fi and Wi-Fi direct support based on the same AP + ??