News on mobility services

• All mobility services concentrated in one service unit.
• Self service registration of vehicles and use of car plate readers data (→ CERN parking).
• Car rentals:
  ✔ new pricing policy. Reduced rates for short term rentals.
  ✔ optimization of the use of CERN vehicles and reduction of the external rental needs resulting in savings for both, the users and the organization.
• Bike rentals:
  ✔ New bikes being purchased to renew and upgrade the current fleet: current number of bikes 382 (Number of bikes needed 550-600).
  ✔ Under study the introduction of a bike sharing service (possibly non docking).
• Shuttles & bus:
  ✔ Outsource to a single external contractor (JACQUET) covering the shuttle and bus services.
  ✔ All shuttle circuits are being reviewed based on results of the consultancy on Mobility Plan and Mobility survey outcome.
  ✔ Shuttle circuit N.3 shutdown during the LS2 period.
• CERN car fleet: data analysis of CERN car fleet usage and optimisation thanks also to centralisation of requests via Mobility Center.
• Taxi vouchers: distributed via Mobility Center, requested via secretariat. Charged on CERN budget codes or Team accounts.
• Taxi access: you must announce the arrival of the taxi to the Guards Service in advance.
Actions to improve mobility

- **Roundabout R2**: Safety improvement for all users (cars, bikes, pedestrians) on the road and parking. Increasing of parking capacity. Integration of a bus stop.

- **Entrance E**: Double lane for increased traffic flow. Dedicated cyclist and pedestrian turnstile gate for improved safety.

- **Prevessin Crossing**: Observation of the traffic during four weeks and tuning of traffic lights.

- **Place de Particules**: inauguration on 28.09.2018. 110 Bicycle parking places.

- **Salam road (B107)**: One way direction of the Salam road, two-way cycling paths. Security crossroad Salam-Wu-Bakker road and Salam-Weisskopf road. More parking space along Salam Road; **Fermi road**: one-way traffic to improve 2 dangerous xings.

- **SM18**: Improvement of the access control

CERN's mobility objectives (from the CERN Masterplan):

• Promote an efficient and fluid access to the sites.
• Promote alternative offers for inter and intra-site transport (and in particular to improve the safety of all modes of transport within the sites).
• Optimize parking supply and management (to reduce the pressure on parking at the Meyrin site).

The objectives of the study were:

o Collect and analyze basic data (CERN specificities, travel constraints, usage statistics of transport modes available, etc.).

o Identify current employee travel patterns and satisfaction / use of existing mobility management measures.

o Propose ways to optimize current mobility measures and complete the range.

o Evaluate vs. costs potential savings / savings from measures and estimate their environmental impact.

o Define an implementation schedule and ways to facilitate acceptance of changes.
CERN mobility plan

WG proposed to use an external consultant to help develop the CERN's mobility plan.

Topics covered:
• Access to CERN sites
• Mobility between sites
• Mobility on the sites
• Parking
• Public transport
• Soft mobility
• Mobility safety

Mobility survey and mobility plan to include action list with cost benefit analysis and provisional schedule
- First draft of the CERN mobility plan survey has been produced and reviewed by mobility working group and will be presented to ED for feedback.
- SMB will organize in April an open session on mobility covering the following topics:
  o Mobility services (shuttle, bikes, car fleet, car sharing…)
  o Past actions aiming at improving mobility to/from and around CERN
  o Mobility working group activity
  o Draft CERN mobility plan

Here I present a first look at mobility diagnostic by CITEC, based on the mobility survey.
Mobility survey and plan

- Mobility at CERN – Article in bulletin of 29/08.2017 and 24/09/2018
- An extensive analysis of mobility services data and mobility survey results has been done leading to the production of the first draft of CERN mobility plan

Mobility at CERN – status and next steps

24 SEPTEMBER, 2018

Earlier this year, the Mobility Working Group launched the first part of a two-part survey about mobility at CERN. Some 43% of you took the time to give us your opinions, and I’d like to thank you for doing so. The fact that so many of you responded underlines the importance attached to this issue at CERN, and your input will be invaluable in helping us to make CERN mobility safer, greener, and more pleasurable for all.

You can learn more about the results of the survey in an article in this week’s Bulletin, but I’d nevertheless like to look at a few of the highlights here. First of all, a high response rate means that we can interpret the survey as a representative sample of the CERN population, giving an idea of the importance you attach to this issue, as well as making planning easier. Respondents included CERN-employed members of the personnel as well as users and contractors, with the highest response rate – 75% – being among staff. The survey confirmed that the majority of commutes are from France, and we learned which entrances to the CERN sites are the most heavily frequented. We learned about the peak times in the morning and the evening, and that our median commutes are short – just 8 km or 20 minutes – though there are some outliers, with a small number of people, including staff, commuting from countries beyond our Host States.

Unsurprisingly, the majority of commutes are made using individual motorised vehicles, though car sharing...
Composition of the survey sample – Breakdown by site and accessibility

Survey sent to about 10'000 employees (~ 2'800 staff and 7'200 "users")

A large majority of respondents (80%) work on the Meyrin site

4,300 responses received in total, overall representativeness rate of around 40 to 50% (but almost 75% for CERN staff).
Of the respondents, almost half (48%) are part of the CERN staff.

About 20% of respondents live in Switzerland, about 70% in France:

<table>
<thead>
<tr>
<th></th>
<th>Suisse</th>
<th>France</th>
<th>Autres provenances</th>
</tr>
</thead>
<tbody>
<tr>
<td>CERN (all)</td>
<td>710 (20%)</td>
<td>2'330 (70%)</td>
<td>320 (10%)</td>
</tr>
<tr>
<td>Staff</td>
<td>420 (25%)</td>
<td>1'320 (75%)</td>
<td>40 (&lt;5%)</td>
</tr>
<tr>
<td>Users</td>
<td>230 (20%)</td>
<td>590 (60%)</td>
<td>230 (20%)</td>
</tr>
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</table>

Nearly half of employees arrive between 7:30 and 8:30 am
At 9:00 am, 85% of employees are present on the CERN site

More than half of employees depart between 17:30 and 18:30. At 18:30, three-quarters of employees left the site.
On average, people travel 14 km (median 8 km) to work.

...and take 33 minutes (median 20 minutes) to commute.
Commuting travel – current modal shares (all employees)

- Part modale voiture « solo » d'environ 60% (similaire à l'enquête 2014)
- Part modale TIM (« transports individuels motorisés ») globale de 70%
- Part modale TP (« transports publics ») d'environ 10% (dont 2% pour les navettes CERN)
- Part modale MD (« mobilités douces ») inférieures à 20% (mais 13% de personnes à vélo!)
- Combinaison de plusieurs modes : 5%

Parts modales plus ou moins similaires à 2014
A titre indicatif: voiture solo 2014 = 59%
Commuting travel – current modal shares (from CH vs FR)

<table>
<thead>
<tr>
<th>Part modale</th>
<th>Collab. CH</th>
<th>Collab. FR</th>
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</thead>
<tbody>
<tr>
<td>Voiture «solo»</td>
<td>40%</td>
<td>67% (+27 pts.!)</td>
</tr>
<tr>
<td>Covoiturage</td>
<td>4%</td>
<td>9% (part modale doublée)</td>
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<tr>
<td>TP</td>
<td>29%, 3% navettes</td>
<td>4% seulement !, dont 1% navettes</td>
</tr>
<tr>
<td>MD</td>
<td>16%</td>
<td>17% (part modale similaire)</td>
</tr>
<tr>
<td>Combinaison (P+R/P+Bike)</td>
<td>9%</td>
<td>3% (part modale 2x moindre)</td>
</tr>
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</table>

Réparation modale collab. CH

Modal share TP low (8% overall, but almost nul for employees inhabitants in France) and almost no use of shuttles (2%)
Commuting travel – current modal shares (staff vs user)

Modal shares are quite different between CERN employees and users

Modal share Soft mobility not negligible (17% overall and 26% for users!)

Moderate TIM "Users" share lower (partly housed on or near the site, not necessarily vehicle available) ◊ focus on internal staff
• Access: problem of restricted opening hours of certain doors.
• Flexible schedules needed to avoid congestion at peak times.
• Increasing the safety of soft modes on access roads (and the interior of the site) as well as infrastructure at destination (parking, showers, cloakrooms, etc.) would increase the modal share MD, including bicycles.
• Parking doesn’t seem to be a major concern for most people.
• The private car is mainly used for reasons of speed, flexibility or the location of the home or a bad service (home, sites or inter-sites).
• Mentioned the lack of safety on the road to use the bike.
• For 60% of cyclists, the weather has an influence on cycling.
• People use the car to make chains of activities during or at the end of the day.
• Half of public transport users fall back on this mode because they do not have a private car (the use of TP is constraint for these people - who are essentially user).
• More than 2/3 of TP users have a Unireso subscription (weekly, monthly or yearly).
• Nearly three-quarters of employees are likely to perform professional trips during the day, of which 44% at least once a week.
• 40% of employees often walk within the Meyrin site, 42% occasionally.
Parking evolution 2014-2017

PARKING EVOLUTION (2014-May 2017)

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<tr>
<td>2015</td>
<td>6645</td>
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<tr>
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</table>


Meyrin site:
- B563 = -20 pl.
- B119-B104 = -44 pl.
- TOTAL = -64 pl.

Preveissin site:
- B774 = +121 pl.
- TOTAL = +121 pl.

Hors site:
- Flag Park = -180 pl.

83 spots LESS THAN 2014

2019 → B107 = +100 approx.
Parking

• Half of the *single drivers* generally say they find a place to park easily, 13% find rarely, if ever, room in the desired area.

• If parking were paying, *single drivers* would be willing to invest an amount of:
  "Staff: 12 .- / month on average (median to 0.-)"
  "Users: 11 .- / month on average (median to 0.-)"

Motorists are thus only willing to pay a "symbolic" amount to secure a place. If the pricing would be greater than the desired amount:
  ▪ 60% of people would maintain their current modal habits.
  ▪ Only 15% would be willing to change their habits.

At least a quarter of single driver are totally uncomfortable with the idea of parking fees.
Business trips – Modal shares

Reasons for using the private car:
Employees use their private vehicle for reasons of flexibility mainly. As a general rule (70%), they find a parking space at their place of destination.

CERN is more experienced as a "car" place than "pedestrians".
Current use of CERN shuttles

Circuit 1 at the Meyrin site seems very little used: for half of the races, there are indeed only 2 to 7 passengers. These figures seem very low considering the high number of stops that could drain users and the importance of travel within the site that the analysis of the fleet of CERN vehicles has highlighted.

Circuit 2 "Prévessin" seems to respond to relatively regular travel needs. However, it is mainly the first two races of the morning (8h and 8h45), as well as the last two of the afternoon (17h20 and 18h) which are the busiest, with a good forty passengers on average.

Circuit 3 "Shift ALICE / CMS / LHCb / COMPASS / NA61 / NA62" also seems to meet relatively regular travel needs. Attendance at the three daily races is very similar, with an average of 15-20 passengers per race.

More than 80% of users use shuttles (about 20% at least 1x per week), compared to 2/3 of internal employees (only 3% at least once a week).

Line 4 "Airport" is the one that is used by the largest number of users.

On circuit 4 between Meyrin and the airport, there is a strong asymmetry of attendance data. There are significantly more passengers in the CERN => airport direction than in the opposite direction.
A first draft of CERN mobility survey and plan has been produced and reviewed by the mobility working group.

This CERN mobility plan draft will be presented to the ED for feedback.

SMB will organize an open session on mobility in April 2019 for the CERN community covering the following topics

- Mobility services (shuttle, bikes, car fleet, car sharing...)
- Past actions aiming at improving mobility to/from and around CERN
- Mobility working group activity
- CERN mobility plan draft
SPARES
CERN Masterplan 2030 and Mobility WG

Mobility general objectives

- **M1** Optimiser l’offre et la gestion du stationnement.
  - M1.1 Favoriser un taux de rotation en phase avec les usages dans les zones desservies.
  - M1.2 Mettre en place une gestion différenciée des parkings longue, moyenne et courte durée.
  - M1.3 Privilégier l’utilisation des zones de stationnement pour les usages professionnels.
  - M1.4 Envisager les parkings en itinérance (aérien, entrée) dans le cadre de nouveaux développements.

- **M2** Promouvoir les offres alternatives de transport inter et intra-sites.
  - M2.1 Encourager les déplacements en mode doux (piétons/Vélos) par des mesures d’aménagement et d’infrastructure.
  - M2.2 Favoriser la co-voiturage et augmenter l’attractivité de l’offre des navettes.
  - M2.3 Renforcer et diversifier l’offre de véhicules en libre-service.

- **M3** Favoriser un accès efficace et fluide au sites du CERN.
  - M3.1 Améliorer la hiérarchie du réseau routier à l’intérieur du domaine CERN.
  - M3.2 Favoriser les synergies avec les services de transport public et les initiatives d’offre d’infrastructure de transport.

Parking management

Communication

Infrastructure

CERN mobility Working Group

<table>
<thead>
<tr>
<th>ACCU</th>
<th>Cristina Blino</th>
<th>Soft Mob.</th>
<th>Jens Vigens</th>
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<tr>
<td>AP</td>
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<td>Rémi Martens</td>
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<td>Caroline Pividori</td>
<td>SMB</td>
<td>Ana Lacárcel (Technical secretary)</td>
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<tr>
<td>IT</td>
<td>Wayne Salter</td>
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</table>
Proposed pricing policy for cars

For historic reasons the current pricing policy is **incoherent, illogical** and poses problems for AIS to implement and support. The proposed pricing policy is designed to

- **Assure long term sustainability** where revenues from the car rental activity finance the bicycle services, the person transportation services (shuttles) beyond the current allocation, petrol, and the overheads related to operations of mobility center and workshop.
- **Improve the use** of the CERN car fleet (more km per car, less cars → more parking)
- **Reduce** our **carbon imprint** (encouraging use of bus and bike services)
- Offering a very **competitive service** to CERN and its users (Offering an alternative to external car rental companies by offering a similar service at a much lower price; reducing the car fleet overall)

1. The prices of short-term rental have been dropped significantly (~35 percent, not considering the km fees that have been dropped).
2. Shorter rentals are encouraged (prices per day rise as function of the duration of the rental).
3. The km and fuel charges are removed (this is not reflected in the percentages; and compensates for a part the price increase of ‘no logo’ cars)
4. Logo cars are less expensive than ‘no logo’ as they do not benefit from a casco coverage; but the ‘no logo’ car rental increase is less than that for logo cars.
5. In the simulation, we have reserved 125kCHF annually to fund the improved bus service to Preveassin (no extra MTP request or contribution of concerned departments will be requested).
6. The ‘owned’ fleet will finance the shared services (short term rental, car sharing, bus and bike services). In consequence the prices for these ‘owned’ cars will slightly increase with 1 or 2 CHF per day. LS2 (and YETS) cars generate a significantly bigger admin overhead in the mobility center and drive more km’s; their rental fee is in consequence higher.

### MOBILITY

#### CURRENT RATES & OFFER

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#### NEW RATES & OFFER

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#### FUEL

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#### Increase/Decrease %

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<td>-11%</td>
<td>-37%</td>
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<table>
<thead>
<tr>
<th>TOTAL</th>
</tr>
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<tbody>
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<td>16%</td>
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</table>
- 2368 CERN people surveyed
- 70% living in France
- 11% living in Saint-Genis-Pouilly
- 7% living in Meyrin
- Alternative mode of transport: 40% (1)

(1) ONU in comparison has 54% living in Geneva with only 48% using alternative mode of transport
Powerline done and closed → February 2018

Current ‘blue’ surface phase 3 (ref. sample)

Target for completion: Mid June 2018

New pedestrian (incl. reduced mobility) entrance (entrance B and Jura-33): July 2018
Security - Entrance E

• WAY IN:
  • Double access lane to enter the site
  • Safer soft mobility access

• WAY OUT:
  • Independent pedestrian and bicycle access
Entrance E final layout

Meyrin West road plan new layout

ACTIONS:
- Two roads → Access
- One road → Exit
- New pedestrian / bike access
- Displacement of the left gate and info pannel between both gates
Works on SM18 entrance

- Improvement of the access control
- Work started: 26 November 2018
- Word end (Black top) : February 2019
• Study to simulate traffic conditions around Meyrin site in collaboration with University of Geneva:
  • Evaluate impact on the route de Meyrin and the Saint Genis roundabout if Gate E and inter site Tunnel would be accessible under the same conditions as Entrance A, B, C located in Switzerland.
En moyenne, il y a rarement plus de 50 véhicules CERN qui circulent en même temps (soit moins de 10% de la flotte !).

Cela ne veut évidemment pas dire que tous les autres véhicules sont disponibles (de nombreux véhicules étant stationnés provisoirement par leurs usagers, le temps d’une intervention ou d’une séance), mais cela démontre quand même un potentiel d’optimisation de la flotte non négligeable.
The Mosaic Plot demonstrate a large distribution of travel throughout the Meyrin site, with a virtual absence of convergent flows (with the exception of the 7:45-8am time slot).

The ability to respond to this request with shuttles running on predefined lines will be complicated.