



filiaal van het FANC | filiale de l'AFON

Bel V, a subsidiary of the FANC (Federal Agency for Nuclear Control)



TRACTEBEL Engineering (GDF SUEZ)



United States Nuclear Regulatory Commission (US-NRC)



Sandia National Laboratories (SNL)

PAUL SCHERRER INSTITUT



Paul Scherrer Institut (PSI)

**The 7th Meeting of the
“European MELCOR User Group”**

**Co-organized by Bel V, a subsidiary of the FANC (Federal Agency for Nuclear Control) and
TRACTEBEL Engineering (GDF SUEZ)**

Brussels, Belgium

March 17-18, 2015

Preliminary Announcement and Call for Presentations

Deadline for registration to the technical trip to SCK•CEN	January 16, 2015
Deadline for registration to the meeting (including indication of presentation(s) title(s) and duration)	February 16, 2015
Deadline for hotel reservation	February 16, 2015
Presentation(s) in power point or in pdf format	At the meeting

On-line information is available at
<http://www.psi.ch/emug/>

1. ORGANISATION AND HOST

The 7th Meeting of the European MELCOR User Group is jointly organized by Bel V, a subsidiary of the FANC (Federal Agency for Nuclear Control) and Tractebel Engineering (GDF SUEZ) and PSI/US-NRC/SNL. This first announcement is to inform you of this event and to call for presentations for the meeting.

The meeting will be held at the head office of Tractebel Engineering, Avenue Ariane, 7, Brussels (Belgium) on 17-18 March 2015. The meeting will start in the morning on the 17th and should finish around 16h00 on the 18th. Final details and a draft agenda will be sent to registered participants before the meeting.

SCK•CEN will host a technical visit to the facilities in Mol on 19 March 2015 (approximately from 8h00 to 17h00).

This call is also available at <http://www.psi.ch/emug/>

2. BACKGROUND OF THE MEETING

The MELCOR severe accident integral code is developed by Sandia National Laboratories (SNL) for the U.S. Nuclear Regulatory Commission (NRC) in the USA, and is provided to various European organizations through bilateral agreements under the 'Cooperative Severe Accident Research Program' "CSARP" between US-NRC and the European organizations. The code has been used for many reactor safety applications by these organizations. Some of these organizations also continuously assess the code with data available from Severe Accident Research programs. A few organizations have also developed models for certain critical issues, which appear in local versions of MELCOR for testing and with the goal of implementation in future releases from SNL.

The main interests in establishing the user group are to foster experience and information exchanges among the European organizations though organized annual meetings and to establish a common needs on the further development and error correction for MELCOR. The 1st meeting of the EMUG hosted by PSI was held in December 2008. PSI is acting as coordinator of the group.

AIMS OF EUROPEAN MELCOR USER GROUP

- To provide a forum for the presentation and discussion of the experience gained by:
 - MELCOR assessment using integral and separate-effect tests leading to presentation of performance of models and related issues including sensitivity to selected model parameters and model uncertainties,
 - Model development efforts,
 - Application of MELCOR for plant safety studies, including L2 PSA, which demonstrates weaknesses and strengths of MELCOR models in reproducing the individual severe accident phenomena and interplay between them occurring in the nuclear and balance of plant systems and the effect of operator actions on the accident progression through user input as introduced in the code input models,
 - Use of code with different compilers and operating systems.
- Prioritization of user error correction and model development needs, to be transmitted to the code developers and the NRC
- To minimize the efforts required to obtain an adequate knowledge of optimum use of MELCOR, through sharing of experience,
- To support the gaining of MELCOR knowledge and experience, particularly concerning the younger and less experienced users.

3. SCOPE, CONTENT AND OUTLINE OF THE MEETING

The two days meeting is divided in three sections:

1. Section – NRC and SNL Presentations

About half a day will be devoted to presentations from NRC/MELCOR developers. Each of the following four topics could be given by one presentation.

- NRC MELCOR Activities
 - Code applications
 - Code perspectives, possibility of distribution to international partners, status and future areas of CSARP program
 - New considerations of code development
- MELCOR input
 - New features of input conversion (M186 -> M2.1)
 - New input capabilities in M186 and M2.1
- Current MELCOR development thrust areas
 - Quality assurance
 - Code assessment work and regression testing
 - Code distribution and issue management
 - New MELCOR Models – discussion of new modeling and experience using new models
 - Current code development
- Applications
 - MELCOR best practices
 - Guidance for plant applications

2. Section – User Presentations

About three half days will be devoted to presentations from all of the European organizations. For those who would like to present their experience in plant applications of the MELCOR 1.8.6 and MELCOR 2+, the organizers of the meeting should express their wish to see presentations not on specific aspects of the plant applications evaluating safety aspects of the plants in interest but the experience in use of the MELCOR models, input parameters, nodalization aspects which have certain bearing on the performance of the code as well as the quality of the code estimates.

Presentations will be grouped into following 4 sessions:

- Group 1: User experience with nodalization regarding simulation of different issues with preference to focus on RCS, core and RN inventory and release modeling
- Group 2: Modeling features (early and late phase core degradation, corium pool formation, lower head behavior, RN release, etc), new modeling efforts
- Group 3: Model development and assessment, integral assessment, sensitivity studies, code to code comparison (MELCOR to other code or MELCOR 1.8.x to MELCOR 2.1), plant applications (link to uncertainty analysis, PSA L2 and PSA L3, etc.),
- Group 4: Post-processing of results (including possibility of sharing of tools developed by users), run time performance, and input conversion from MELCOR 1.8.5 -> 1.8.6 -> 2+,

3. Section – Discussion of all participants

- Feed back from the participants – user suggestions to further code development (it could be included in presentation)
- Organizational aspects: next meeting

Eventually, a panel session on an issue of interest of MELCOR modeling might be organized during the afternoon of the second day of the meeting.

Further details on the meeting can be obtained from:

Dr. Martina Adorni
Safety analyst – R&D
Bel V
Tel. +32 (0) 2 528 02 11
Fax. +32 (0) 2 528 02 01
E-mail: martina.adorni@belv.be
Web: www.belv.be

4. PRACTICAL ARRANGEMENTS

Participants:

The participation at the meeting is open to experts of the European organizations actively using the MELCOR code in any of its versions or planning to joint CSARP*. The success of the meeting is very much dependent on the active participation of those present, especially by presentations on their own experience with the code.

**If you are not sure about your participation, please feel free to ask further information. All the requests from non-CSARP members will be evaluated on a case-by-case basis.*

Registration:

All the participants should fill in the Meeting Registration Form that is attached to this document, including the title(s) of presentation(s), and send it before February 16, 2015 to:

E-mail: martina.adorni@belv.be

A registration fee will not be required. The participants bear the cost of travel and accommodation. A dinner on the evening of the first day and lunches on both days will be hosted by Bel V and Tractebel Engineering.

Accommodation:

Participants have to take care of accommodation themselves. A block of rooms at a discount conference rate has been set aside at the Hotel Ramada Brussels Woluwe. Guests can complete and return the Hotel Accommodation Form directly to the hotel before February 16, 2015.

Ramada Brussels Woluwe is exactly between the center of the city and Brussels Airport, a 15 minute drive from both. Private parking is available on site (reservation is not needed) and costs EUR 10 per day. The bus service **79** departs across from the hotel (*Steenbok/Capricorne* bus stop) and runs directly to the *Schuman* metro station every 15 minutes (tickets can be purchased on the bus). From *Schuman* metro station you can easily reach the city center: metro stops *Gare Centrale/Centraal Station* or *De Brouckère*.

The Ramada Brussels Woluwe is located 1km from Tractebel Engineering:

- about 15 min walking
- about 10 min by bus line **79**
- about 5 min by Hotel shuttle (about EUR 5/person/way).

There are many hotels in the Brussels city center (wide range of price and quality). In this case public transportation might be needed to reach the meeting location (see Access Map to Tractebel Engineering for more details).

For more information about the city of Brussels please go to: <http://visitbrussels.be/>

Transport:

There are convenient flights to Brussels airport <http://www.brusselsairport.be/en/> For local transportation, you can use taxi or public transport <http://www.stib-mivb.be/>. Parking is possible during the meeting at Tractebel Engineering.

Example of trip by public transport from Zaventem airport to Ramada Brussels Woluwe.

At the airport, the bus station is located on level 0 - one floor down from the arrivals hall - and can be easily reached by using the escalators or elevators. Centrally located at the bus station there are three platforms each with their specific use.

You can take the MIVB/STIB Airport Line up to the stop *Diamant*.

- Airport Line **12**: from Monday to Friday until 8 PM, it halts at the most important stops.
- Airport Line **21**: during the week after 8 PM, on Saturday, Sunday and holidays, it halts at every stop.

From *Diamant* bus stop, you can take the bus line **79** direction *Kraainem* up to the *Steenbok/Capricorne* bus stop (nearly in front of the Ramada Brussels Woluwe main entrance).

You can buy your ticket from the "GO ticket" vending machines before boarding. These machines accept Maestro bank cards, credit cards and coins. You can also buy tickets from the driver (more expensive, only coins).

Language:

All presentations and discussions will be in English.

Presentations:

Presentations (in MS power point or Acrobat pdf format), can be sent to Dr. M. Adorni. The presentations will be uploaded to the EMUG group web site after the meeting. Those participants, who would prefer a CD with presentations, please contact Dr. M. Adorni during the meeting.

Technical visit:

SCK•CEN will host a technical visit to the facilities in Mol on 19 March 2015. If you wish to participate, please read the following instructions and send (preferably by e-mail and signed in blue ink) the related documentation before January 16, 2015 to:

Mr. Dario Bisogni
Nuclear System Physics expert group
Institute for Advanced Nuclear Systems
SCK•CEN
Boeretang 200 B-2400 Mol (Belgium)
E-mail: dbisogni@SCKCEN.BE

1. Visitors living in Belgium (private address) need to:

- Fill out the form 'Veiligheidsverificatie NL' (Dutch language) or 'Vérification de sécurité FR' (French language). Please make sure that it is filled out completely and that it is signed in blue ink.

2. Visitors living abroad need to:

- Fill out 'Toegangsvergunning NL' (Dutch language) or 'Demandes d'accès FR' (French language). The pdf-document 'Request for Access' (English Language) can be used to help out, but the Dutch or French document is needed.
- Person HOLDING a security habilitation or clearance in country of residence, please provide (in addition to the 'Request for Access'):

- A proof of this habilitation or clearance with details of level, expiration date and if possible reference number
- Person NOT-HOLDING a security habilitation or clearance in country of residence, please provide (in addition to the 'Request for Access'):
 - Or a letter of a nuclear installation in their country of residence, clearly stating the person has access to the nuclear site
 - Or a certificate drawn by the employer and duly signed by the security officer of the company, stating person has access to confidential or secret information
 - Or a certificate of criminal record

SCK•CEN is one of the largest research institutions in Belgium. Every day, more than 700 employees dedicate themselves to developing peaceful applications of radioactivity. Their developments have already resulted in a long list of innovative and forward-looking applications for the medical world, industry and the energy sector. For more information: <https://www.sckcen.be/en/>

Preliminary program for the technical visit:

09h00 Arrival
 09h15 Visit EURIDICE - HADES underground laboratory. More information at <http://science.sckcen.be/en/Facilities/HADES>
 11h15 Visit Technology (TCH) hall (group 1). Experimental facilities in support of MYRRHA. More information at <http://www.sckcen.be/en/Research/Infrastructure/MYRRHA>
 Visit BR1 (group 2). More information at <http://science.sckcen.be/en/Facilities/BR1>
 12h45 Lunch
 14h15 Visit TCH hall (group 2)
 Visit BR1 (group 1)
 15h45 End

Depending on the number of confirmed participants and on the availability of another facility (VENUS-F/GUINEVERE, an Accelerator-Driven System prototype, more information at <http://science.sckcen.be/en/Facilities/VENUS>), a final program will be issued.

A bus will departure from Hotel Ramada Brussels Woluwe at 8h00 and will be back at about 17h00. Lunch will be hosted by SCK•CEK.



EMUG

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Control) and TRACTEBEL Engineering (GDF SUEZ)
Brussels, Belgium
March 17-18, 2015**

Meeting Registration Form

Surname (Family name)¹:

Given Name (s):

Title or Function:

Institution:

E-mail address:

Title (s) of the presentation (s):

Time needed for presentation²
(including 5 min for discussion):

Vegetarian food/other
requirements on food (please
specify):

To be sent as soon as possible and in any case before 16 February, 2015, to

Dr. Martina Adorni
Safety analyst – R&D
Bel V
Tel. +32 (0) 2 528 02 11
Fax. +32 (0) 2 528 02 01
E-mail: martina.adorni@belv.be

¹ (Please indicate whether Prof., Dr., Mr., Mrs.)

² In the case the time for presentation will have to be corrected due to the schedule, the author will be informed.



RAMADA

Ramada Brussels Woluwe

67 Avenue des Pléiades

1200 Brussels – Belgium

Tel. 0032 2 775 31 80 - Fax. 0032 2 775 31 89

Email info@ramadabrusselswoluwe.be

Hotel Accommodation Form

From 16.03.2015 to 20.03.2015

Ref: EMUG 2015

Guest Name:.....

Company:.....

Address:.....

.....

Tel :

Please reserve me as follow:

Arrival date: Expected arrival time:

Departure date:

Please tick in the box to indicate accommodation:

Your Choice	Room type	Room rate 16 to 18 March 2015	Room rate 19 March 2015
<input type="checkbox"/>	Business single use	170 EUR per room per night	145 EUR per room per night
<input type="checkbox"/>	Executive single use	190 EUR per room per night	165 EUR per room per night
<input type="checkbox"/>	Suite single use	210 EUR per room per night	185 EUR per room per night

Our buffet breakfast and wifi access are included.

Supplement second person in room is € 20 (same services included).

All reservations and rates are subject to availability and are inclusive of taxes and services charges.

To guarantee this reservation **(no guarantee = the room will be released at 2 pm on arrival day):**

Please indicate:

Type of Credit Card: Amex Diner's Mastercard/Eurocard Visa

Number: Expiry date:

Any cancellation or change is free of charge up to 24 hours before the arrival day.

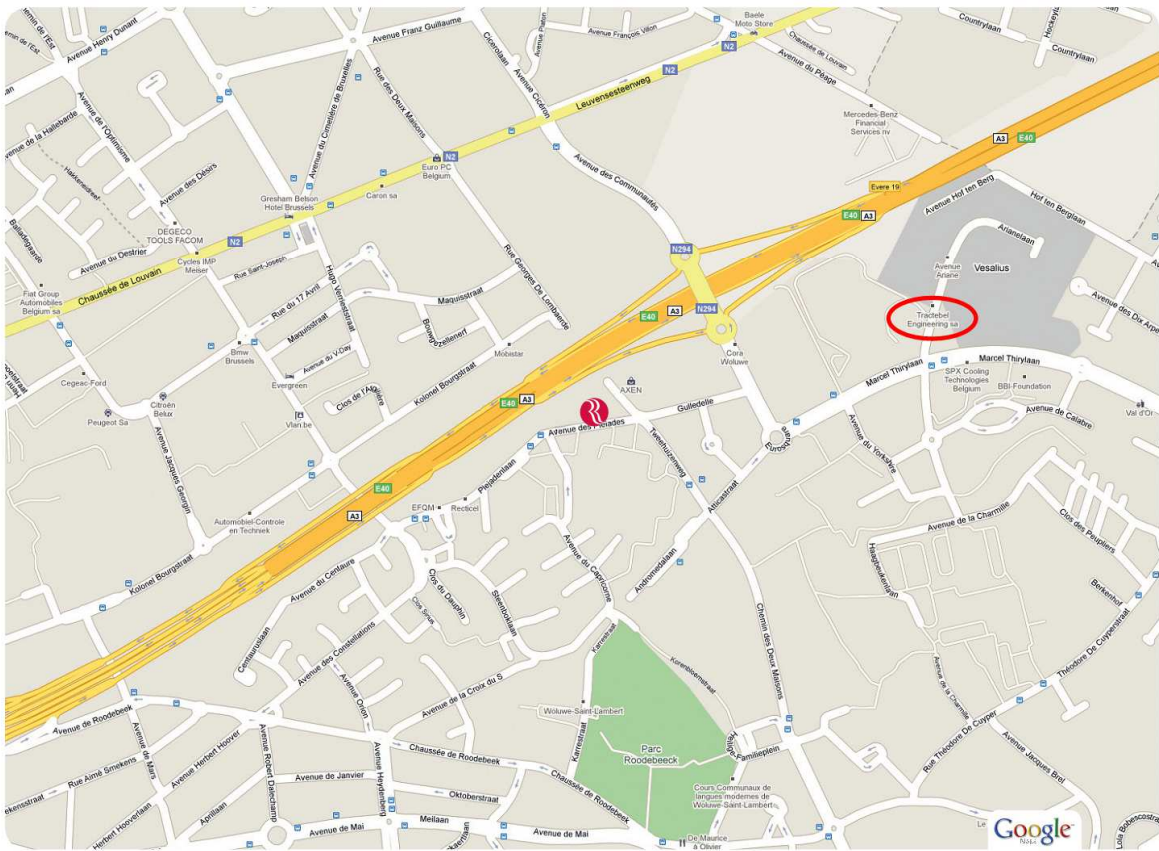
In case of No-Show or late cancellation, the first night will be charged to your credit card.

Bills must be settled directly to the hotel before departure.

Date:

Signature:

Please complete and return to the Ramada Brussels Woluwe before 16.02.2015



Driving instructions:

from any direction; take 'Ring Brussels' (RO) direction E40 Liège/Leuven, exit E40 Liège/Leuven but direction 'Brussels'. On this E40 Liège/Leuven - Brussels take Exit 19 (Woluwe-Evere) - (Coming from the 'Ring Brussels' (RO) after exit take Left and cross the bridge over motorway, coming from 'Brussels Centre' after exit take Right) - After 100 meters turn Right at the first traffic light. Drive 500 meter, continue through the very end and you will arrive at the hotels' private garage entrance.

Major Business Purposes:

- 0.3km from Colonel Bourg Business District
- 4km from European Parliament
- 6km from Palais des Congrès (Centre)
- 6km from Brussels Expo (International Congress Centre)

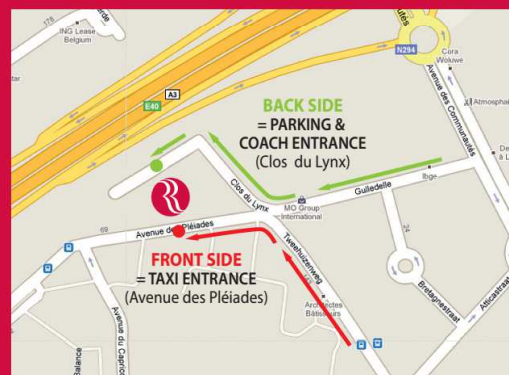
Transportation:

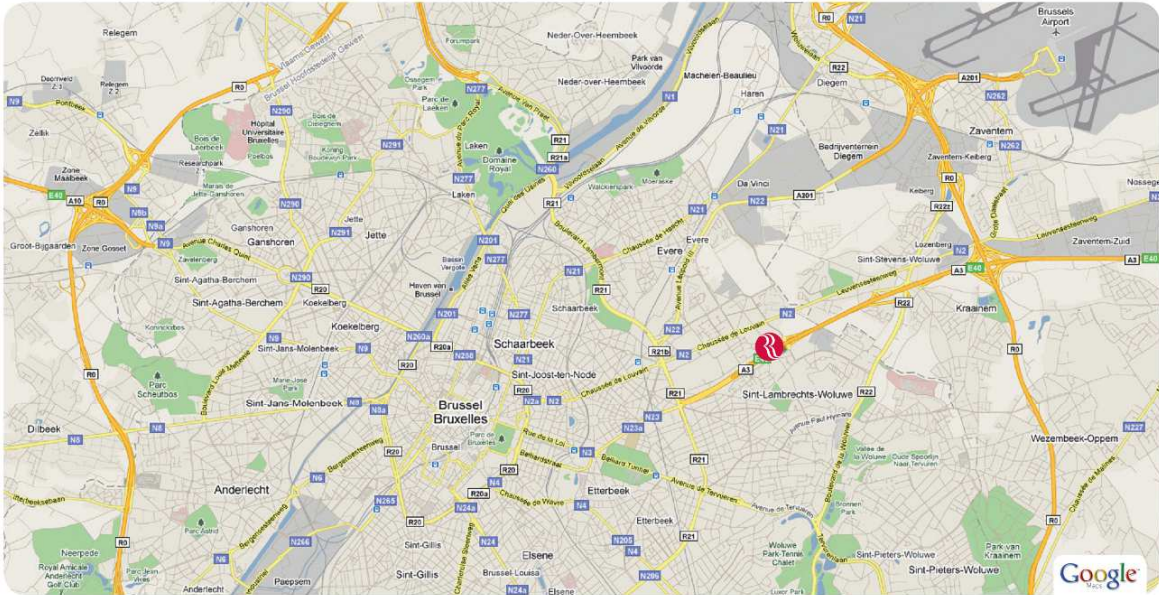
- 0km from E40 Motorway (Brussels - Liège)
- 0km from Pleiades bus station
- 3km from Brussels International Airport-Zaventem
- 6km from North train station
- 50km from Brussels South Airport (Charleroi - direct line coach to Midi Station Brussels)

Communication:

- 1.5km from NATO Headquarters
- 4km from EC - Berlaymont & Rue de la Loi
- Direct access to EC/Schuman with Bus line 79 in front of hotel

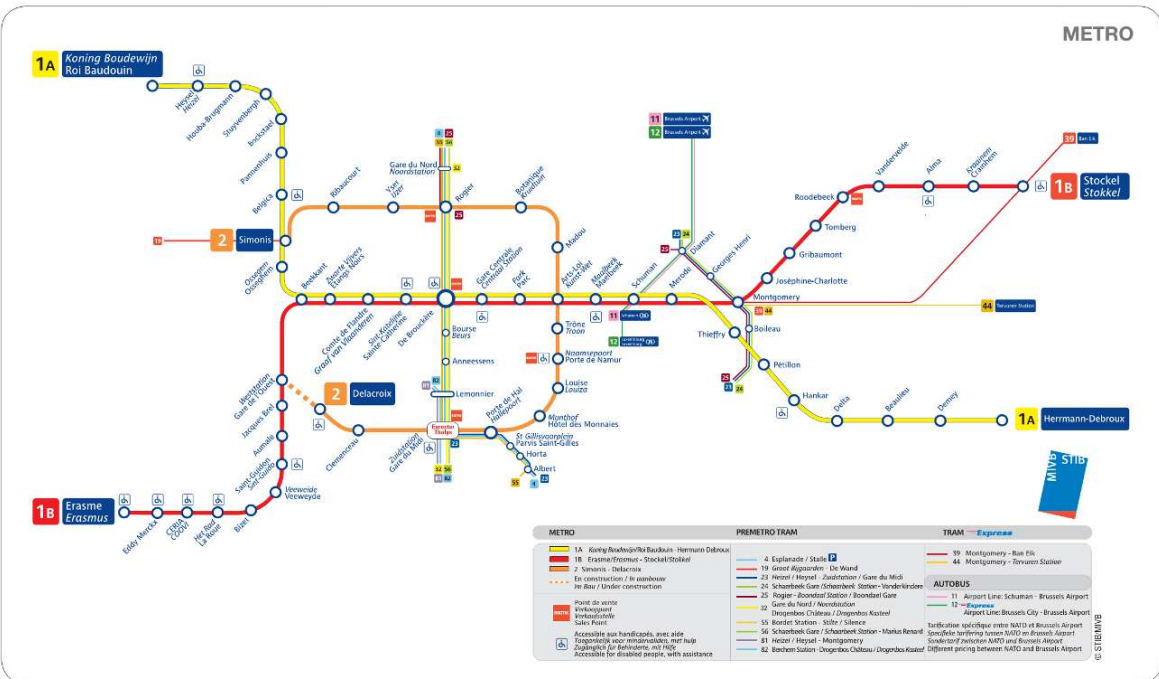
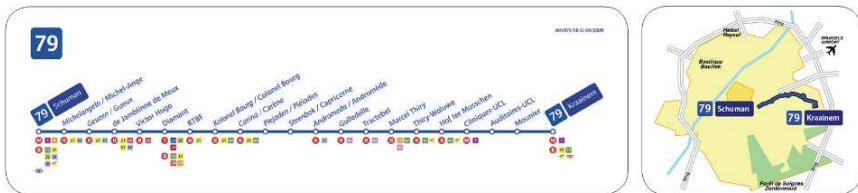
TWO POSSIBLE ENTRANCES OF THE HOTEL





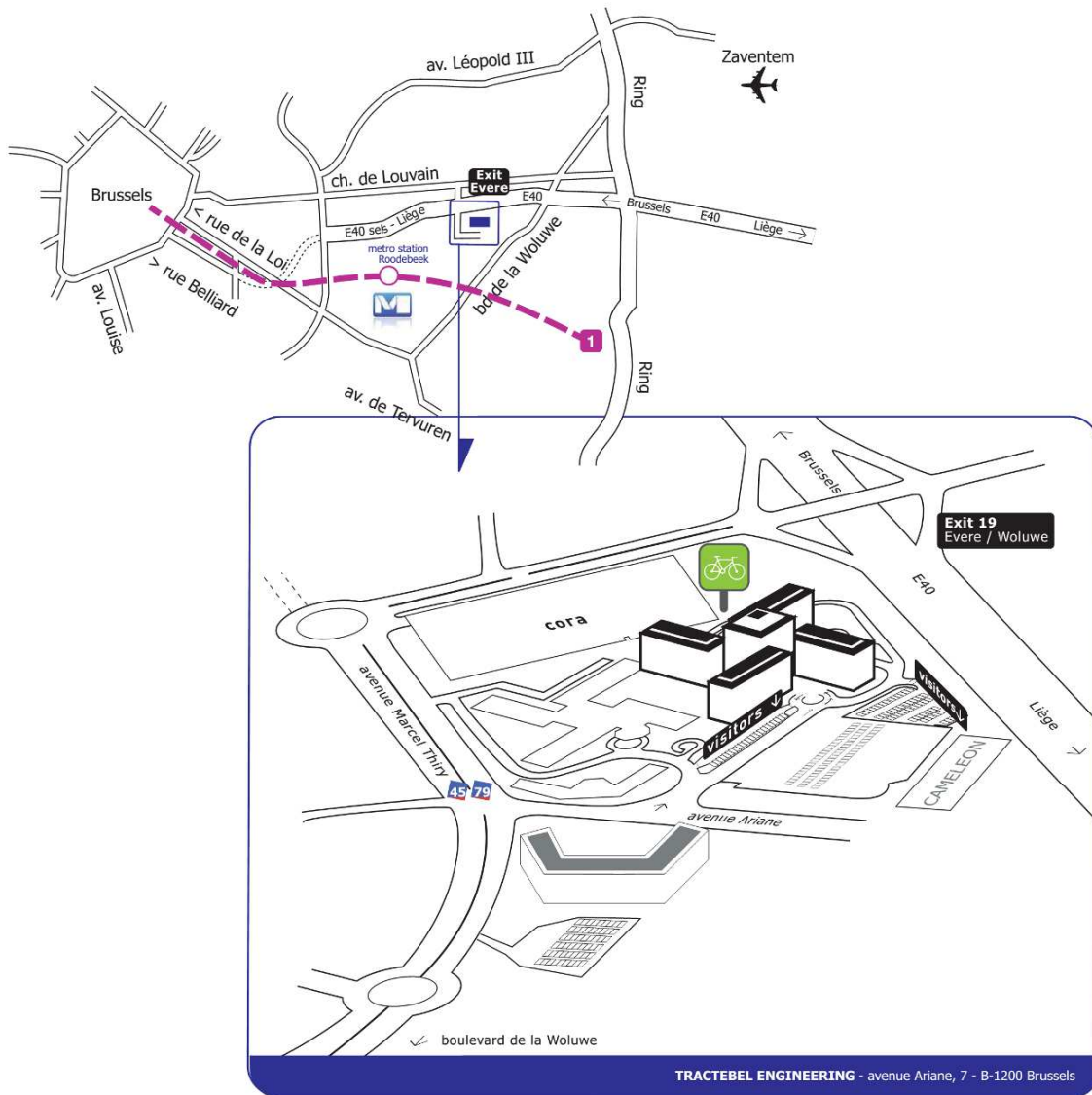
PUBLIC TRANSPORT

BUS
Bus Line 79 Schuman
(EC Headquarter) to Kraainem
Ramada Brussels**** =
Steenbok/Capricorne



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 Avenue Ariane, 7 - 1200 Brussels - BELGIUM
 tel. + 32 2 773 99 11 - fax + 32 2 773 99 00
 engineering@gdfsuez.com
 www.tractebel-engineering-gdfsuez.com

ACCESS MAP



Bus stop: TRACTEBEL
 bus lines: 45 and 79 - crossroads: Marcel Thiry / Ariane

Metro station: Roodebeek
 1 metro line: 1 (STIB / MIVB)

Train station: Schuman / Bordet (SNCB / NMBS)

45 Bus line 45:
 connected to the metro station "Roodebeek" (metro line 1)
 and to the train station "Bordet"

79 Bus line 79:
 connected to the train and metro station "Schuman" (metro line 1/5)
 and to the metro station "Kraainem" (metro line 1)