



QUALITY SPECIFICATIONS FOR ROADWAY BRIDGES,
STANDARDIZATION AT A EUROPEAN LEVEL

WG 2 and WG 3 WORKSHOP OF COST ACTION TU1406

20 – 21 October 2016

Delft, The Netherlands



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COST TU 1406 WG 2 and WG 3 Workshop and Meetings

COST ACTION TU1406

QUALITY SPECIFICATIONS FOR ROADWAY BRIDGES,
STANDARDIZATION AT A EUROPEAN LEVEL

DATE OF THE MEETING
20th and 21st October, 2016

Venue of the meeting
TNO
Van Mourik Broekmanweg 6,
2628 XE Delft , Netherlands

ACTION CONTACTS

Chair of the Action
Vice Chair of the Action
Local organizer

Action websites

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1. WG 2 AND WG 3 WORKSHOP BRIDGE PERFORMANCE GOALS AND QUALITY CONTROL PLANS

1.1. OBJECTIVES

The third workshop of COST Action TU 1406 “Quality specifications for roadway bridges, standardization at a European level” (www.tu1406.eu), will be held in Delft, the Netherlands, at TNO Institute on 20th and 21st of October 2016, after IALCCE conference. <http://www.ialcce2016.org/>.

In the first year of the COST TU 1406 Action the main focus was on screening process of existing European documents and establishing a database for PIs. The next step in the project is to focus on technical and non-technical bridge performance goals, followed by the establishment of quality control plans. Therefore, the workshop will be dedicated on following topics:

- Evaluation of bridge performance (criteria, requirements, goals, thresholds);
- Technical, sustainability and economic aspects of bridge performance;
- Life-cycle Assessment;
- Quality control plans;
- Reliability of testing/investigation techniques and methods;
- Qualification criteria for inspectors.

During the 2-day workshop selected manuscripts will be presented and discussed, followed by WG 2, WG 3 and WG5 meetings.

1.2. PROGRAMME

Thursday, October 20th, 2016

Session 1: 9.00 - 11.00

Moderators: Irina Stipanovic, Jose Matos

9.00 – 9.30 Welcome and opening session by:

José Matos, Chairman of the COST TU 1406, University of Minho, Portugal,
 Agnieszka Bigaj-van Vliet and Jos Wessels, TNO, Netherlands
 Irina Stipanovic, WG 2 leader, University of Twente, Netherlands

**9.30 – 10.00 Keynote speaker: Agnieszka Bigaj-van Vliet, TNO, the Netherlands:
 Advancement of fib Model Code for structural concrete to incorporate
 assessment of existing structures.**

10.00 – 10.20 Mariano Angelo Zanini: Performance goal assessment for existing bridges subject to pier local scour

10.20 – 10.40 Dimitrios Nikolaidis: Detailed Evaluation of Deteriorated Highway Bridges in Greece

10.40 – 11.00 Vikram Pakrashi: Principal component analysis as a comparative technique for bridge management systems

11.00 – 11.30 Coffee break

Session 2: 11.30 - 12.30

Moderators: Matej Kusar, Lojze Bevc

11.30 – 11.50 Carmen Andrade: Resistivity as indicator of durability: survey in existing bridge

11.50 – 12.10 Ivan Zambon: Reliability of existing bridges determined with physical models – chloride induced corrosion

12.10 – 12.30 Tomasz Kamiński: Quality control of masonry bridges based on empirical influence lines of displacements

12.30 – 13.20 Lunch

Session 3: 13.20 - 15.00

Moderators: Rade Hajdin, Eleni Chatzi

13.20 – 13.30 Opening of WG 3 by Rade Hajdin

13.30 – 14.00 Keynote speaker: Bruce Johnson, State Bridge Engineer, Oregon Department of Transportation, (WG 3): Overview and preliminary results of Long Term Bridge Performance Program (LTBPP)

14.00 – 14.20 Poul Linneberg: Reflections on Quality Control Plans for Girder and Frame Bridges

14.20 – 14.40 Dimosthenis Kifokeris: Project performance appraisal frameworks as blueprints for bridge quality control

14.40 – 15.00 João Amado: Quality Control Plan for Earth Retaining Walls – Conceptual Framework

15.00 – 15.30 Coffee
Session 4: 15.30 - 17.00

Moderators: Ana Mandic, Amir Kedar

- | | | |
|---------------|---|--|
| 15.30 – 15.50 | Ignacio Pinero: | Value-based method for condition assessment and management of bridges |
| 15.50 – 16.10 | Matej Kusar: | Non-destructive investigation techniques in bridge inspection |
| 16.10 – 16.30 | Stefan Maas: | Structural health monitoring based on static measurements with temperature compensation to detect stiffness reductions |
| 16.30 – 17.00 | Collecting findings from the 1 st day workshop – Open Discussion | |
| 17.30 – 19.00 | City tour through Delft, walk to the dinner | |
| 19.00 | Networking dinner (details will follow) | |

Friday 21/10/2016
Session 5: 09.00 - 10.30

Moderators: Alfred Strauss, Yiannis Xenidis

09.00 – 09.30 Keynote speaker: Mitsuyoshi Akiyama, Waseda University, Japan: Long term performance of concrete bridges under multiple hazards

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|---------------|----------------|---|
| 09.30 – 09.50 | Giel Klanker: | Sustainability score for roadway bridges |
| 09.50 – 10.10 | Boulent Imam: | Environmental performance framework for bridge infrastructure maintenance |
| 10.10 – 10.30 | Joana Almeida: | Life-cycle cost optimisation on a set of bridges |

10.30 – 11.00 Coffee break
Session 6: 11.00 - 12.10

Moderators: Vikram Pakrashi, Guðmundur Guðmundsson

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|---------------|-----------------|--|
| 11.00 – 11.20 | Nikola Tanasic: | Bridge management practice & methodologies related to flooding hazards |
| 11.20 – 11.40 | Naida Ademovic: | Assessment of bridge performance by load testing after |
| 11.40 – 12.10 | João Amado | Interceptable Decaying Processes in Arch Bridges |

Closing Ceremony: 12.10 – 12.40

Moderators: Joan Casas and Giel Klanker

12.10 – 12.25 Wrap up of the workshop – Open discussion

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|---------------|------------|--|
| 12.25 – 12.35 | Ana Mandic | Announcement of the next joint COST TU1402 - COST TU1406 – IABSE WC1 Workshop, Zagreb 2-3 March 2017 |
|---------------|------------|--|

12.35 - 12.40 **Closing words by Joan Casas and Giel Klanker**

12.40 – 13.30 **Lunch**

Session 7: **13.30 – 15.30**

13.30 – 15.30 **Joint WG 2 and WG 3 meeting**

Moderators: **Irina Stipanovic and Rade Hajdin**

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|---------------|--|------------------|
| 13:30 – 13:50 | Categorization of indicators/findings | Alfred Strauss |
| 13:50 – 14:10 | Performance goals and performance assessment | Irina Stipanovic |
| 14:10 – 14:30 | From findings to performance goals | Rade Hajdin |
| 14:30 – 15:30 | General discussion / Resolution of incompatibilities | All |

15.30 – 16.00 **Coffee break**

Session 8: **16.00 – 17.00**

16.00 – 17.00 **WG 5 Kick-Off Meeting**

Moderators: **Vikram Pakrashi and Helmut Wenzel**

Agenda:

| | |
|---------------|---|
| 16.00 – 16.25 | Scope of activity around WG5 – Presentation to invitees |
| 16.25 – 16.40 | Brief review of activities in other WG in TU1406 relevant for WG5 |
| 16.40 – 16.50 | Circulation of questionnaire to invited members and/or members interested in WG5 (in person and email) in relation to their expectation, capacity and experience in relation to WG5 activities to identify potential barriers and opportunities of communication in WG5 |
| 16.50 – 17.00 | Update of follow-up work and assignment of scope of work and indicative timelines, along with alignment with activities of other WG |

1.3. LOCATION, DATES AND TRAVELLING

1.3.1. LOCATION AND DATE

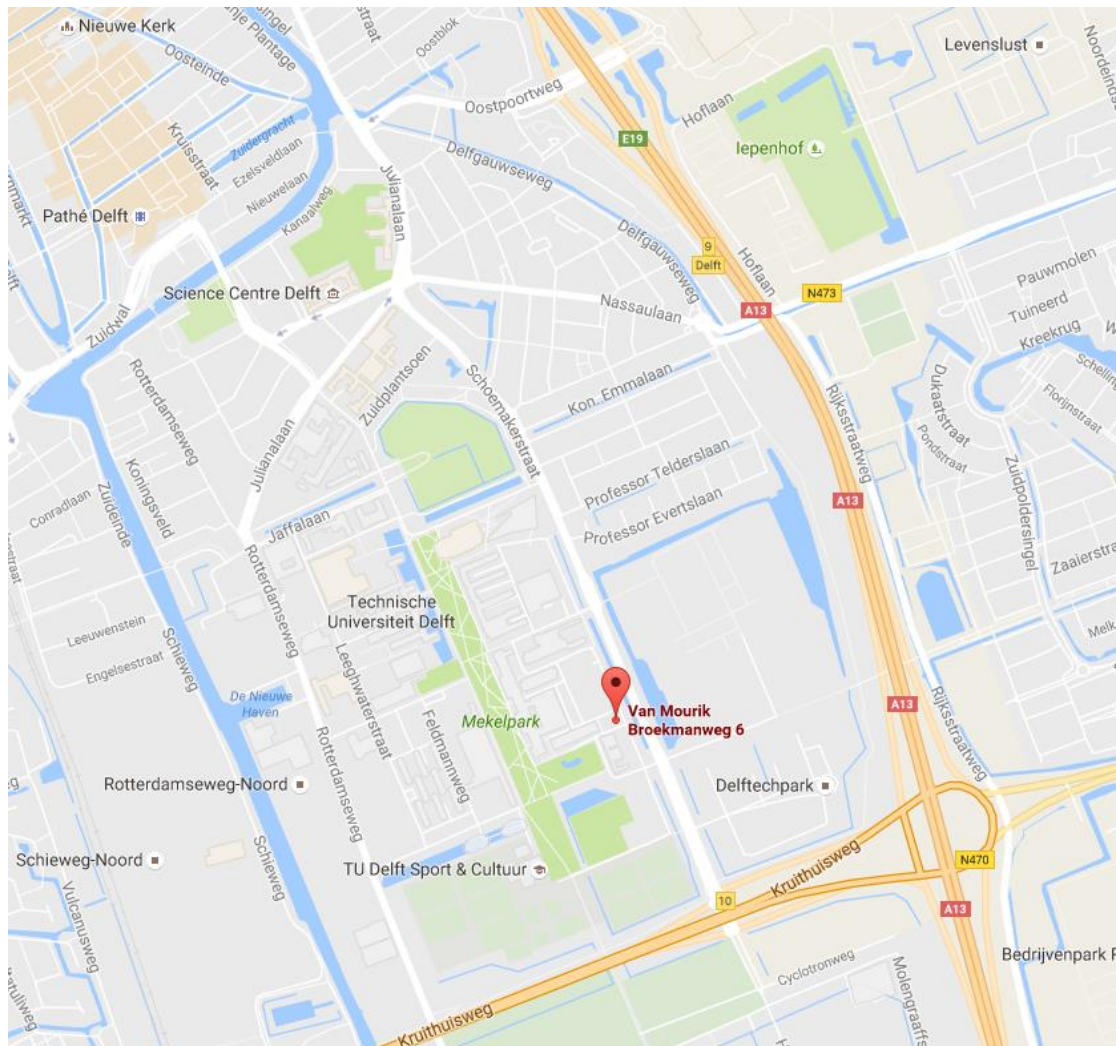
The workshop will take place at TNO, location Van Mourik Broekmanweg in Delft, the Netherlands. Workshop dates are Thursday 20 and Friday 21 October 2016.

TNO is an independent research organisation, that joins the creation of economic and social value. The focus is on transitions or changes in five social themes:

- Industry: from economic stagnation to growth in high-technology industry
- Healthy Living: from illness and treatment to health and behaviour
- Defence, Safety & Security: from a wide range of threats to controllable risks
- Urbanisation: from urbanisation bottlenecks to urban vitality
- Energy: from conventional sources to sustainable energy systems.

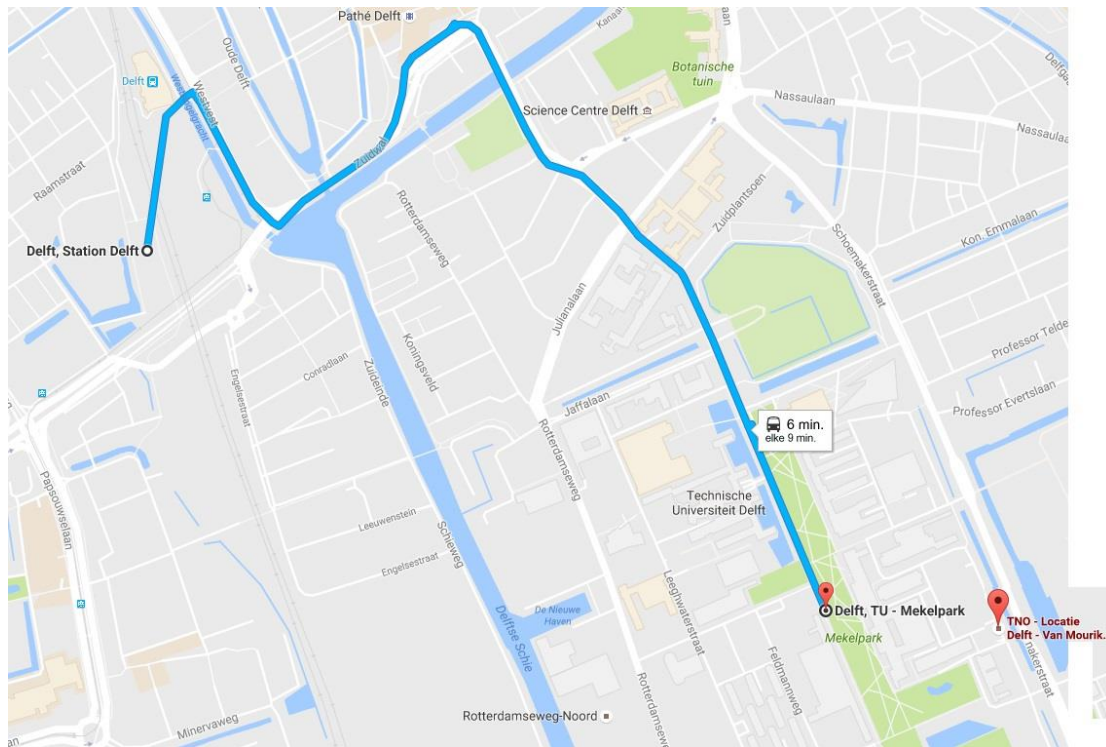
TNO LOCATION DELFT - STIELTJESWEG
Van Mourik Broekmanweg 6,
2628 XE Delft

The exact meeting rooms will be signed at the location.

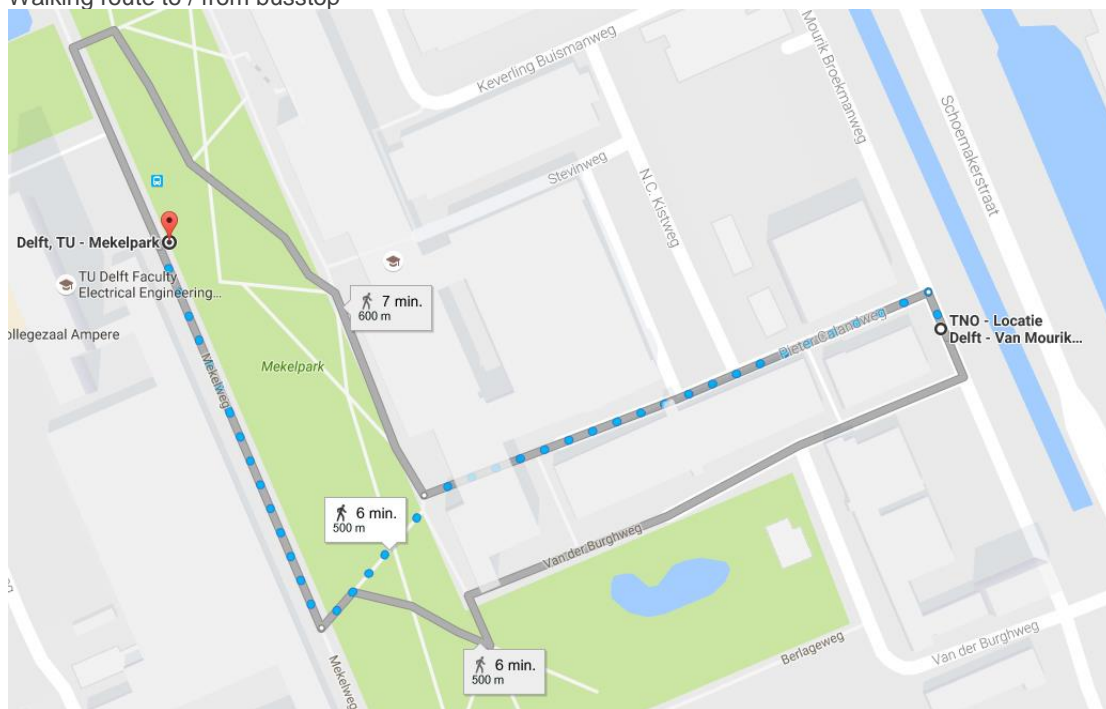


Frequent busses run from Delft train station via the city centre to close to the TNO building:

- :Veolia bus 69 (direction Technopolis) to stop 'Delft – TU-Mekelpark'
 - RET bus 40 (direction Rotterdam Centraal to stop 'Delft – TU Mekelpark'
 - RET bus 174 (direction Rotterdam Noord) to stop 'Delft – TU Mekelpark'
- Busses run every 7 to 8 minutes during peak hours. A route planner for public transport in the Netherlands can be found on: <http://9292.nl/en#>. Tickets can be bought on the bus.



Walking route to / from busstop



1.3.2. HOW TO GET TO DELFT

Delft is located centrally in the heart of Holland known as the Randstad region, between Rotterdam and The Hague. Delft represents Europe at its best, with fast connections to anywhere in the world. Both physically, boasting Amsterdam and Rotterdam The Hague airports in close proximity and countless international railway connections available, as well as in terms of its role in many international knowledge networks, alliances and businesses.

Delft's fine infrastructure makes it easily accessible by car and public transport. It is a compact city and all the main locations inside its historic centre are well within walking distance.

For more information on getting to and from Delft including local transportation options, please visit the IALCCE 2016 conference website: <http://www.ialcce2016.org/accessibility/>.

- **Amsterdam Schiphol – Delft**

The Netherlands is easily accessible by airplane from all parts of the World. Schiphol International Airport (www.schiphol.nl) is one of central hubs for intercontinental as well as for European flights. From Schiphol International Airport, Delft is easy to reach via public transport or by special taxi, the so-called Schiphol Travel Taxi. Furthermore there are nine trains per hour that make the 45 minute journey between the airport and Delft. For more information, please visit www.ns.nl

- **Rotterdam The Hague Airport – Delft**

Except for Schiphol International Airport, Delft has a second airport in its surroundings: Rotterdam-The Hague Airport (www.rotterdamairport.nl). This airport is aiming at the European destinations. Rotterdam The Hague airport is the area's regional airport at just five kilometers from Delft. It offers fast and convenient services to many European destinations. For more information, please visit www.rotterdamthehagueairport.nl

- **By road**

Delft is connected to an excellent network of Dutch and European motorways, such as the A12, linking the region with Germany and the A16 – A4, which connects it to Belgium.

- **Public transport**

Delft is centrally located within the European railway network, connecting it to Paris, for example. There are many local transport facilities to move delegates during a conference, such as tram, bus, taxi and water taxi. Within Delft you can take busses, taxi's or you can walk of course. The city centre is very compact. For public transport information, please visit <http://9292.nl/en#>.

1.4. ACCOMMODATION

Delft and the direct surroundings offers more than 1,100 hotel rooms, to give your delegates their well-earned night's sleep and much more.

There are many 3 and 4 star hotels in the city centre and along the A13 motorway as well as in our neighbouring cities, both small scale accommodations in historic premises as well as modern luxury hotels.

The following hotels have been selected for the IALCCE2016 conference and are also suggested for COST TU 1406 meeting. The hotels are listed in order of distance to the event.

1. [WestCord Delft – from € 109.00](#)
2. [Royal Bridges Delft – from € 114.50](#)
3. [Hampshire Delft Centre – from € 89.50](#)
4. [Campanile Delft – from € 75.00](#)
5. [Shanghai Hotel Holland – from € 85.00](#)
6. [Van der Valk Hotel Den Haag – Nootdorp – from € 115.00](#)
7. [Hampshire Babylon The Hague – from € 149.00](#)
8. [Holiday Inn Express The Hague Parliament – from € 129.00](#)

Please book your hotel following this link: <https://www.preferredreservations.nl/ialcce2016/> to make use of the special rates for the IALCCE2016 conference.

Please make sure to make your booking as soon as possible as the number of available rooms for the IALCCE2016 conference are limited.

1.5. COMMITTEES

An executive scientific committee as well an organizing committee were defined.

1.5.1. SCIENTIFIC COMMITTEE

| <i>Name</i> | <i>TU1406 Position</i> | <i>E-mail</i> |
|-----------------------------|-------------------------|--|
| José Matos | Chair | chair@tu1406.eu |
| Joan Casas | Vice-Chair | vicechair@tu1406.eu |
| Eleni Chatzi | Technical Secretariat | tecsec@tu1406.eu |
| Alfred Strauss | WG1 Leader | wg1@tu1406.eu |
| Irina Stipanovic | WG2 Leader | wg2@tu1406.eu |
| Rade Hajdin | WG3 Leader | wg3@tu1406.eu |
| Amir Kedar | WG4 Leader | wg4@tu1406.eu |
| Vikram Pakrashi | WG5 Leader | wg5@tu1406.eu |
| Guðmundur Valur Guðmundsson | WG6 Leader | wg6@tu1406.eu |
| Jan Bieñ | STSM Coordinator | stsm@tu1406.eu |
| Raffaele Landolfo | Monitoring & Evaluation | landolfo@unina.it |

| | | |
|-----------------|------------------------|--|
| André Orcesi | Innovation | andre.orcesi@ifstar.fr |
| Yiannis Xenidis | Research & Development | ioxen@civil.auth.gr |

1.5.2. ORGANIZING COMMITTEE

| <i>Name</i> | <i>TU1406 Position</i> | <i>E-mail</i> |
|------------------|------------------------|--|
| José Matos | Chair | chair@tu1406.eu |
| Irina Stipanovic | WG2 Leader | wg2@tu1406.eu i.stipanovic@utwente.nl |
| Rade Hajdin | WG 3 Leader | wg3@tu1406.eu rade.hajdin@grf.bg.ac.rs |

1.5.3. SECRETARIAT

| <i>Name</i> | <i>TU1406 Position</i> | <i>E-mail</i> |
|----------------------|----------------------------|--|
| Eleni Chatzi | Technical Secretariat | tecsec@tu1406.eu |
| Lara Leite | Administrative Secretariat | adminsec@tu1406.eu |
| Zaharah Allah Bukhsh | Local support | z.allahbukhsh@utwente.nl |

1.5.4. LOCAL ORGANIZERS

| <i>Name</i> | <i>TU1406 Position</i> | <i>E-mail</i> |
|------------------|------------------------|--|
| Giel Klanker | MC member | giel.klanker@rws.nl |
| Irina Stipanovic | WG2 Leader | wg2@tu1406.eu i.stipanovic@utwente.nl |

2. PARTICIPATION

2.1. FUNDING AND REIMBURSEMENT

COST organization provides a certain amount of financial means for organizing such meetings and to reimburse participants. This includes for example accommodation costs, meals, transport expenses, etc. For more information about travel reimbursement request please visit the following [webpage](#). Please book your flight and hotel as soon as possible in order to find cheap solutions.

3. SOCIAL EVENTS

3.1. SOCIAL EVENT

City tour and Networking dinner will be organized on 20th of October. The expected costs is around 40 EUR per person. **Please fill in the [Google Form](#) latest by 7th of October** if you intend to participate in the events in order to book accordingly. Details about the meeting point and dinner location will follow.



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WWW.TU1406.EU