

PRELIMINARY PROGRAM (LAST UPDATE FEBRUARY 06, 2018)



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5th International Commercial Vehicle Technology Symposium Kaiserslautern

March 13 to 15, 2018
University of Kaiserslautern



commercial vehicle alliance
kaiserslautern



WELCOME MESSAGE

Ladies and gentlemen,

Welcome to the 5th International Commercial Vehicle Technology Symposium in Kaiserslautern. The commercial vehicle industry is vitally important to Rhineland-Palatinate. As a region, the south-west of Germany – in particular the southern part of Rhineland-Palatinate and western Baden-Württemberg – is a focal point for the commercial vehicle sector, both in Germany and Europe. Approximately a quarter of national turnover in the commercial vehicle industry is generated in the south-west.

Here in Rhineland-Palatinate, the local presence of key manufacturers and suppliers for the commercial vehicle industry, coupled with an outstanding scientific research environment in the field of commercial vehicles which works together closely with small, medium-sized and major enterprises, are complementary attributes. With the world's only Master's level programme in Commercial Vehicle Technology at the University of Kaiserslautern's Graduate School Commercial Vehicle Technology (CVT), the Center of Commercial Vehicle Technology (ZNT), the Fraunhofer Innovation Cluster 'Digital Commercial Vehicle Technology' (DNT) and the Commercial Vehicle Cluster South-West (CVC), the fields of science, research, technology and industry work together to strengthen the status of Rhineland-Palatinate as a centre of innovation. In 2010, these clusters merged to create the Commercial Vehicle Alliance in order to pool public relations activities for the commercial vehicle industry and to discuss new and innovative strategy approaches with an audience of international experts at the symposia which are held every two years.

The focus of this year's symposium is on energy and resource efficiency, innovative drives and alternative fuels. In this regard, safety and reliability pose major challenges in terms of automated and autonomous driving. The development of

effective simulators, which help to assess new and innovative concepts in 'real time', will also be among the topics addressed.

I am delighted that the 5th edition of the Commercial Vehicle Technology Symposium will once again attract international visitors to Rhineland-Palatinate. The automotive and commercial vehicles industry is one of the economy's most important sectors and the symposium is clear proof that the federal state is visible on the international stage as well. The State Government identified the sector as one of six areas of strategic potential under the Innovation Strategy Rhineland-Palatinate (RIS). The state of Rhineland Palatinate will continue to actively support this high-potential area in future in an effort to guarantee the long-term innovative capacity and competitiveness of actors from the fields of science and industry.

I hope that you enjoy an excellent symposium and can engage in many interesting discussions. I wish you all the best and every success for the future.

Malu Dreyer

Malu Dreyer
State Premier of Rhineland-Palatinate



PROGRAM OVERVIEW

TUESDAY, MARCH 13, 2018

18.00 Welcome and opening of exhibit, refreshments

WEDNESDAY, MARCH 14, 2018

9.00 Opening and welcome addresses by politicians

9.30 Keynotes

François Jaussi (Liebherr Machines Bulle SA)

Michael Fauser (StreetScooter GmbH)

10.30 Accompanying exhibition of industrial-booth, poster sessions and product presentations, coffee break

11.10 Presentations in topic groups

12.50 Accompanying exhibition of industrial-booth, poster sessions and vehicle presentations, lunch

14.50 Presentations in topic group

16.30 Accompanying exhibition of industrial-booth, poster sessions and product presentations, coffee break

17.00 Presentations in topic groups
until approx. 18:15 h

19.00 Conference dinner

THURSDAY, MARCH 15, 2018

8.30 Opening and
Keynote

Christof Weber (Mercedes-Benz do Brasil)

09.10 Presentations in topic groups

10.40 Accompanying exhibition of industrial-booth, poster sessions and
product presentations, coffee break

11.30 Presentations in topic groups

13.10 Accompanying exhibition of industrial-booth, poster sessions and
product presentations, lunch

14.30 Keynote

Stefan Stahlmecke (John Deere GmbH & Co. KG)

15.00 Presentations in topic groups

16.20 Final plenary session

16.40 Expected end of event

ON BOTH CONFERENCE DAYS

- Accompanying exhibition of industrial-booth, poster sessions and product presentations
- High-ranking managers and senior engineers are talking about new trends and innovations for commercial vehicles, busses, agricultural or construction machinery, or special purpose vehicles

WEDNESDAY, MARCH 14, 2018

TRACK 1

9.00	Opening and welcome (room 115)
10.30	Exhibition and coffee break in the lobby
ASSISTED AND AUTOMATED DRIVING AND WORKING (1)	
11.10	Validation of an analytical method for payload estimation in excavators <i>Walawalkar¹; Heep²; Schindler¹; Leifeld¹; Frank³ (1: RWTH Aachen; 2: LuK GmbH & Co. KG; 3: Volvo Construction Equipment)</i>
	Benchmark of Different Calibration Methods of Driver Assistance Systems (DAS) Sensors at the End of Line of a Truck Final Assembly Plant by a Tolerance Chain Analysis <i>Tentrup; Wagner; Stroh (Dürr Assembly Products GmbH)</i>
12.50	Cooperation and Communication of Autonomous Tandem Rollers in Street Construction Scenarios <i>Ropertz¹; Wolf¹; Berns¹; Hirth²; Decker³ (1: TU Kaiserslautern; 2: Robot Makers GmbH; 3: BOMAG GmbH)</i>
	Lane Change Assistant System for Commercial Vehicles equipped with a Camera Monitor System <i>Jager¹; Baumann¹; Klingemann² (1: ADASENS Automotive GmbH; 2: FICOSA International GmbH)</i>
12.50	Exhibition, vehicle presentation and lunch break in the lobby
ENERGY AND RESOURCE EFFICIENCY	
14.50	Representative Road Selection and Route Planning for Commercial Vehicle Development <i>Speckert¹; Lübke¹; Wagner¹; Anstötz²; Haupt² (1: Fraunhofer ITWM; 2: MAN Truck & Bus AG)</i>
	Einsatz von virtuellen Messkampagnen bei der Getriebeentwicklung <i>Scherpelz¹; Plieske¹; Gottwald¹; Halfmann¹; Weyh² (1: ZF Friedrichshafen AG; 2: Fraunhofer ITWM)</i>
16.30	Fuel Efficiency Optimization of Market Specific Brazilian Truck Applications <i>Teutsch; Cheruti; Gasser; Pereira; de Sousa; Weber (Mercedes-Benz do Brasil, Brazil)</i>
	Prüfstandsvalidierung von Fahrwerken als Basis für die Optimierung von Bodenschonung und Energieeffizienz von Traktoren und Landmaschinen <i>Döll; Herlitzius (TU Dresden)</i>
16.30	Exhibition and coffee break in the lobby
ASSISTED AND AUTOMATED DRIVING AND WORKING (2)	
17.00	Simulationsbasierte Untersuchung einer aktiven Gespannstabilisierung für den Einsatz in Nutzanhängern <i>Czeschner¹; Dessort² (1: AL-KO Alois Kober GmbH; 2: TESIS DYNAware Technische Simulation Dynamischer Systeme GmbH)</i>
	Behavior-Based Control for Safe and Robust Navigation of an Unimog in Off-Road Environments <i>Wolf¹; Ropertz¹; Berns¹; Thul²; Wetzel³; Vogt³ (1: TU Kaiserslautern; 2: Commercial Vehicle Cluster - Nutzfahrzeug GmbH; 3: Daimler AG)</i>
18.15	Fernhantierte Maschinen für Einsätze in menschenfeindlichen Umgebungen - Entwurf, Entwicklung und virtuelle Einsatzplanung <i>Sanberger, Dietmar; Nakath, Richard (IABG mbH)</i>
19.00	Conference dinner

TRACK 2

9.00 Opening and welcome (room 115)

10.30 Exhibition and coffee break in the lobby

SAFETY, RELIABILITY AND DURABILITY (1)

Cloudbasierte Kundennutzungs-Validierung von Trailern im Feldversuch

Moog, Brand, Kobler (BPW Bergische Achsen KG)

11.10

Model-Based Identification Of Road Profiles and Road Roughness Indicators Using Vehicle Measurements

Burger¹; Speckert¹; Müller²; Weiberle² (1: Fraunhofer ITWM; 2: Daimler AG)

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12.50

Entwicklung eines echtzeitfähigen Sensorsystems zur frühzeitigen Erkennung von Rissen an Trailerrahmen

Klemm; Pimentel; Krieger; Irretier; Dalgic (Universität Bremen)

Sources for Fatigue Load Data

Marquardt (Liebherr-Hydraulikbagger GmbH)

12.50 Exhibition, vehicle presentation and lunch break in the lobby

SIMULATION METHODS (1)

Werkzeug und Vorgehensweise zur zeit- und kosteneffizienten Prüfung und Optimierung der Schwingungsperformance von Fahrersitzen

Krivenkov (Grammer AG)

14.50

Methoden zur simulativen Schwingkomfortbewertung von Nutzfahrzeugen nach ISO 2631-1

Schneider; Stephan, Teutsch (TU Kaiserslautern)

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16.30

Simulationsbasierte Auslegung von variantenreichen, pneumatischen Nutzfahrzeug-Bremssystemen

Wagner; Topcagic; von Mosch (MAN Truck & Bus AG)

Optimierter Entwicklungsprozess zur Vermeidung von Rattern in Trailer-Scheibenbremsen

Koch¹; Gemassmer²; Gräbner¹; von Wagner¹ (1: TU Berlin; 2: BPW Bergische Achsen KG)

16.30 Exhibition and coffee break in the lobby

INNOVATIVE DEVELOPMENT AND MANUFACTURING (1)

Product Processes based on Digital Twin

Alaei¹; Rovinen²; Mikkola¹; Nikkilä² (1: Lappeenranta University of Technology, Finland; 2: Mevea Ltd., Finland)

17.00

Industrie 4.0 Digitalisierung – mehr als nur eine Mode!

Lehmann (Mercedes-Benz Türk A.S.)

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18.15

Methodology for Correlating OECD and DLG PowerMix Test Data to Calculate and Analyze Area-related Fuel Consumption of Agricultural Tractors and Incorporate Life Cycle Assessment

Sendhilkumar²; Faiyazi¹; Seibold²; Apostolov¹ (1: TU Kaiserslautern; 2: John Deere GmbH & Co. KG)

19.00 Conference dinner

THURSDAY, MARCH 15, 2018

TRACK 1

8.30 Welcome and Keynote (room 115)

SIMULATION METHODS (2)

9.10 Was man so alles berechnen kann - Qualität in der Nutzfahrzeubberechnung
Hilgers; Melnikov (Daimler AG)

- Validating Off-Road Vehicles in a 3D Pointcloud
Pena Vina¹; Kleer¹; Rothmann¹; Bitsch^{1,2}; Dreßler¹ (1: Fraunhofer ITWM; 2: Hochschule Kaiserslautern)

10.40 Entwicklung eines Hybridsystems für LKW mit elektrifiziertem Trailer in einer durchgängigen Simulationsumgebung
Thiem; von Pyschow; Beidl (TU Darmstadt)

10.40 Exhibition, poster presentation and coffee break in the lobby

INNOVATIVE DEVELOPMENT AND MANUFACTURING (2)

Hybrid-optimierte Fertigung von tragenden Bauteilen durch Kombination konventioneller und additiver Fertigungsverfahren
Ley¹; Buschhorn¹; Stephan¹; Teutsch¹; Deschner²; Bleckmann² (1: TU Kaiserslautern; 2: WIWeB)

11.30 Kurzzeitmethoden zur Charakterisierung des Ermüdungsverhaltens additiv gefertigter metallischer Strukturen
Blinn¹; Klein²; Beck¹ (1: TU Kaiserslautern; 2: TU Darmstadt)

13.10 Konzept zur Ermittlung der Einsatzpotenziale der additiven Fertigung in der Nutzfahrzeugproduktion
Yi; Gläßner; Aurich (TU Kaiserslautern)

13.10 Exhibition and lunch break in the lobby

14.30 Keynote

ASSISTED AND AUTOMATED DRIVING AND WORKING (3)

15.05 Combining Stereo Disparity and Optical Flow for Basic Scene Flow
Schuster; Bailer; Wasenmüller; Stricker (Deutsches Forschungszentrum für Künstliche Intelligenz GmbH)

- Reference Architectures for A(D)AS in the Commercial Vehicle Domain
Höh¹; Becker² (1: John Deere GmbH & Co. KG; 2: Fraunhofer IESE)

16.20 Mining Test Inputs for Autonomous Vehicles
Wolschke¹; Rombach¹; Liggesmeyer¹; Kuhn² (1: TU Kaiserslautern; 2: Fraunhofer IESE)

16.20 Final plenum

TRACK 2

8.30 Welcome and Keynote (room 115)

SAFETY, RELIABILITY AND DURABILITY (2)

Automatische Beschreibung von ECU-Verhalten

Steinvorth¹; Sax² (1: Daimler Buses, EvoBus GmbH; 2: Karlsruher Institut für Technologie (KIT))

9.10

Combining Behavior-Based and Contract-Based Control Architectures for Behavior Optimization of Networked Autonomous Vehicles in Unstructured Environments

Müller; Wolf; Berns; Liggesmeyer (TU Kaiserslautern)

10.40

Dynamische Lastbestimmung unter besonderer Berücksichtigung der funktionalen Sicherheit gemäß ISO13849

Meindorf; Kempermann (Fluitronics GmbH)

10.40 Exhibition, poster presentation and coffee break in the lobby

SIMULATION METHODS (3)

Multiphysics Simulation of Construction Equipment - Coupling Material, Machine and Power Source

Burger¹; Carlqvist²; Ekevid³; Steidel¹; Weber³ (1: Fraunhofer ITWM; 2: Volvo Construction Equipment AB, Sweden; 3: Fraunhofer IZFP)

11.30

Physics-based virtual environments for autonomous earthmoving and mining machinery

Servin; Lacoursière; Brandl (Algoryx Simulation AB, Sweden)

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13.10

Articulated Hauler Load Simulations - Recent Developments

Danielsson¹; Ekevid¹; Kumar¹; Rothmann²; Wilhelmsson¹ (1: Volvo Construction Equipment, Sweden; 2: Fraunhofer ITWM)

Simulation-based load data analysis for cables and hoses in vehicle assembling and operation

Schneider; Linn (Fraunhofer ITWM)

13.10 Exhibition and lunch break in the lobby

14.30 Keynote

SAFETY, RELIABILITY AND DURABILITY (3)

Development of new rolling bearing for heavy-duty truck applications

Marmol; Kiebusch; Sauer (TU Kaiserslautern)

15.05

Auslegung von mobilen Schwimmbrücken und Arbeitsplattformen

Fraundorfer¹; Kuhnert²; Pena Vina²; Weyh² (1: General Dynamics; 2: Fraunhofer ITWM)

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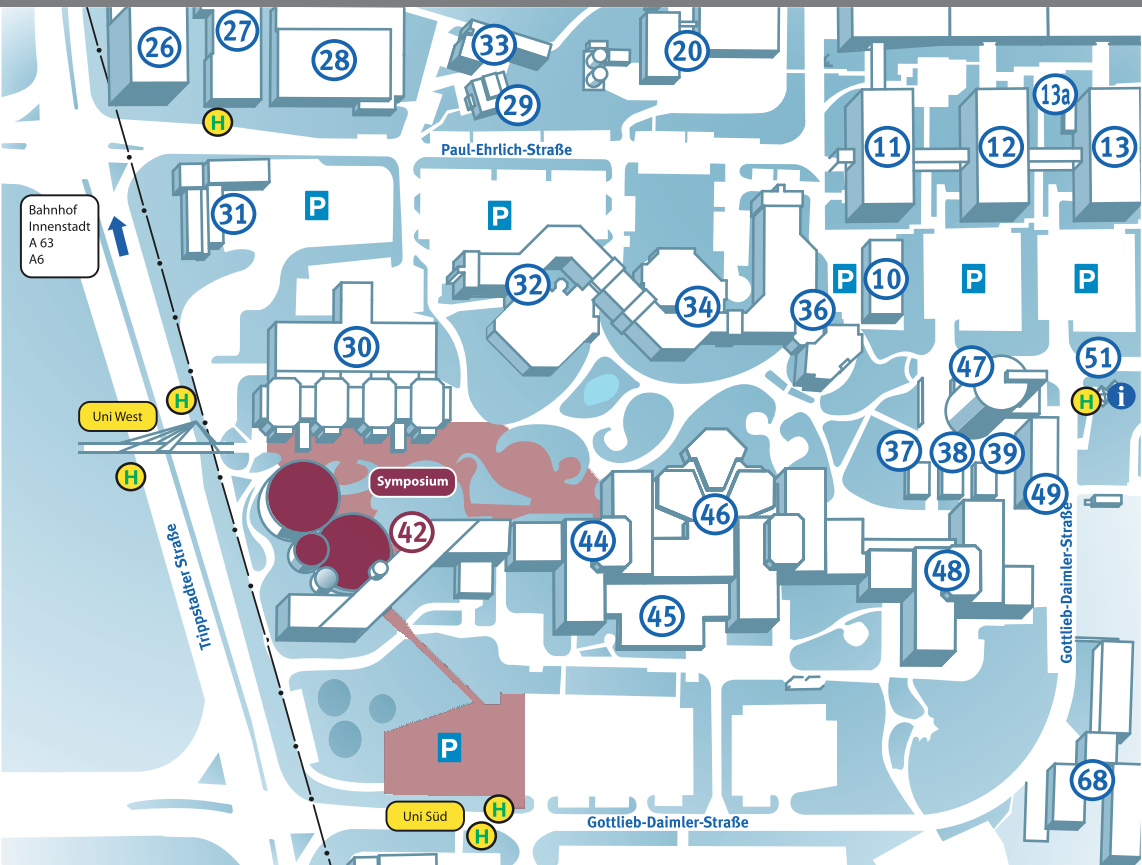
16.20

Definition eines Belastungsszenarios und experimentelle Umsetzung am Ausleger einer Materialumschlagmaschine

Herbert; Käsgen; (Fraunhofer LBF)

16.20 Final plenum

VENUE



The 5th International Commercial Vehicle Technology Symposium will take place on the campus of the University of Kaiserslautern (Audimax: building 42).

The technical and poster exhibit will take place parallel in the lobby of building 42.

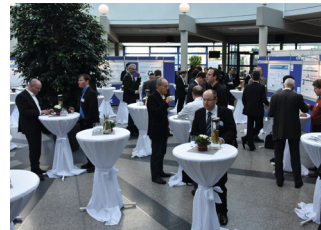
The industrial exhibit will take place outside building 42. It is free of charge for exhibitors and visitors and freely accessible..



TECHNICAL AND INDUSTRIAL EXHIBITION

LOBBY BUILDING 42

- 3D-Systems GmbH
www.3dsystems.com
- CDEuM e.K.
www.cdeum.de
- Commercial Vehicle Cluster –
Nutzfahrzeug GmbH
www.cvc-suedwest.com
- dSPACE GmbH
www.dspace.com
- FERCHAU Engineering GmbH
www.ferchau.com
- Fraunhofer-Innovationscluster
DNT
Fraunhofer-Institute ITWM
und IESE
www.itwm.fraunhofer.de/
www.iese.fraunhofer.de
- Fritzmeier Systems GmbH
www.fritzmeier.de
- HBM Prenscia
www.hbmprenscia.com
- BOMAG GmbH
www.bomag.com
- Daimler AG
www.daimler.com
- ERO-Gerätebau GmbH
www.ero-geraetebau.de
- Fraunhofer ITWM
www.itwm.fraunhofer.de
- Fritzmeier Systems GmbH
www.fritzmeier.de
- Liebherr-Components AG
www.liebherr.com/components
- Mevea Ltd.
www.mvea.com
- Robot Makers GmbH
www.robotmakers.de
- SAF-Holland GmbH
www.safholland.com/de
- VIRO Echt B.V.
www.viro-engineering.com
- Zentrum für Nutzfahrzeug-
technologie
www.znt.uni-kl.de
- John Deere GmbH & Co. KG
www.deere.de
- Terex Cranes Germany GmbH
www.terex.de
- Werner GmbH
www.werner-trier.com
- Zentrum für Nutzfahrzeug-
technologie - RRLab
www.znt.uni-kl.de



EXTERIOR

PROGRAM COMMITTEE AND ORGANIZERS

A. Altherr, John Deere

Prof. Dr.-Ing. J. C. Aurich, TU Kaiserslautern

Prof. Dr. K. Berns, TU Kaiserslautern

A. Brand, BPW Bergische Achsen

Dr. W. Burget, Liebherr-France SAS

Dr. A. Diehl, Grammer

Dr. K. Dreßler, Fraunhofer ITWM

J. Elfsberg, Volvo Construction Equipment

P. Fleischmann, TU Kaiserslautern

Prof. Dr. L. Frerichs, TU Braunschweig

Jun.-Prof. Dr.-Ing. D. Görges, TU Kaiserslautern

T. Grimm, Schaeffler, Herzogenaurach

Prof. Dr.-Ing. M. Günthner, TU Kaiserslautern

Prof. Dr.-Ing. T. Herlitzius, TU Dresden

T. Ille, MAN Truck & Bus

Prof. Dr.-Ing. G. Jacobs, RWTH Aachen

R. Kalmar, Fraunhofer IESE

Dr.-Ing. M. Kleer, Fraunhofer ITWM

R. Klement, SchmitzCargobull

Prof. Dr.-Ing. M. Lienkamp, TU München

Prof. Dr.-Ing. P. Liggesmeyer, TU Kaiserslautern

Dr.-Ing. H. Möller, Daimler

Dr. F. Sager, Alois Kober

Prof. Dr.-Ing. B. Sauer, TU Kaiserslautern

Dr. M. Speckert, Fraunhofer ITWM

Dr.-Ing. N. K. Stephan, TU Kaiserslautern

Dr. T. Tentrup, Dürr Assembly Products

Dr. M. Thul, Commercial Vehicle Cluster Südwest

J. Weiland, Motec, Hadamar-Steinbach

Organizers

Commercial Vehicle Alliance (CVA)

(Umbrella organization)



commercial vehicle alliance
kaiserslautern

- Center for Commercial Vehicle Technology (ZNT) of TU Kaiserslautern



- Innovation Cluster Digital Commercial Vehicle Technology (DNT) of the Fraunhofer Institutes IESE and ITWM



- Commercial Vehicle Cluster Südwest (CVC)



EVENT INFORMATIONEN

Conference Language

The conference languages are English and German. The German presentations will be translated simultaneously into English.

Conference Fees

	registration before 31/12/2017	registration from 1/1/2018	Students
2 conference day	630 €	730 €	200 €*
day ticket (Wed. or Thursday)	420 €	520 €	—

*presentation of a certificate of study or a corresponding certification required

The conference fee includes admission to all conference sessions, catering, the conference dinner and conference proceedings.

For presenters and poster exhibitors (one person each) the conference fee will be waived.

There is no compensation for costs for travel and accommodation.

Registration and Contact

Online registration from October 1, 2017 to February 28, 2018 at:

www.cvt-symposium.de

TU Kaiserslautern

Office of the Commercial Vehicle Alliance

CVA

Phone +49 (0)6 31 205-52 20

Fax +49 (0)6 31 205-37 30

Conference e-mail: info@cvt-symposium.de

Accommodation

Information: www.cvt-symposium.de

DIRECTIONS

By Train and Bus

Connections are available in all directions via the Mannheim IC hub.

By taxi, it takes about 5 minutes from the Kaiserslautern central train station to the campus of University of Kaiserslautern.

Lines 105 and 115 provide direct bus connections from the central train station to the campus of University of Kaiserslautern.

Stop: Universität Süd (building 44).

By Car

University of Kaiserslautern

Gottlieb-Daimler-Straße

67663 Kaiserslautern

- A6 (E12) Motorway Mannheim-Saarbrücken
- A63 Motorway Kaiserslautern-Mainz
- Highway B37 Kaiserslautern-Ludwigshafen
- Highway B270 Pirmasens-Lauterecken

By plane

- Airport Saarbrücken-Ensheim
(1 h by car via motorway A6)
- Airport Frankfurt
(1.5 h by car via motorway A63;
2 h by train)
- Airport Hahn
(1.5 h by car via motorway A62)

LIEBHERR



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