

SYSTEM-OF-SYSTEMS THAT ACT LOCALLY FOR OPTIMIZING GLOBALLY

EU FP7 - SMALL/MEDIUM-SCALE FOCUSED RESEARCH PROJECT (STREP)
FP7-ICT-2013.3.4: ADVANCED COMPUTING, EMBEDDED AND CONTROL SYSTEMS
D) FROM ANALYZING TO CONTROLLING BEHAVIOUR OF SYSTEM OF SYSTEMS (SOS)

Traffic Use Case – TUM application

Local4Global Project Meeting, 23rd September 2015, Chania

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TUM TODOs (I)

Work amount [S] Small, [M] Medium, [L] Large

- Diverse:
 - Server setup physical
 - Server setup OS +certificates
 - Update/Sync mechanism for track information (path, speed limits, etc.) [M]
 - Procedure for user registration (user management) [M]
 - Clock syncing (and daylight saving problems) [S-M]
 - (App Launcher Service location based) [S-M] **in progress 75%**
 - Baseline driving function [S]
 - Device testing / debugging [S-L]
 - Beta- / pre-tests [L]
- User material: **in progress 50%**
 - consent for tracking and transmission (also error reports, etc.) [S-M]
 - small web page (Recommendation to mount the phone, hints: German StVO and mobile devices, who we are, what we are logging, about the project, FAQ, etc.) [M-L]
 - questionnaires and connection to user management [M]
- Communication:
 - Transmit (temporally store) logging data encrypted; sync procedure [M-L] **in progress 50%**
 - Transmit error reports [S-M]
 - Fast track function to inform TRANSVER about vehicle stops [S-M] **in progress 75%**
 - Receive signal plan information / signal plan library [M-L]
 - Receive queue length information [M]

TUM TODOs (II)

- Analyse/Evaluation/Scripts [L]:
 - Login events (how often, classification: single users/continuous users / drop outs)
 - Usage on the road (how often used on the road, distance travelled)
 - General usage parameters (e.g., device type, resolution, landscape/portrait, sound/muted)
 - Speeding (some users are asked to provide baseline driving from time to time)
 - distance travelled with more than 5km/h above speed limit
 - amount of speeding in km/h (e.g., average or RMS)
 - count of severe violations (+15km/h)
 - Driving behavior
 - count stops
 - compliance to recommended speed (e.g., percentage of time)
 - behavior if 'you will arrive at red' is communicated (acceleration/deceleration, speed level)

You are here: [Home](#) > [Projects](#) > [SSL Server Test](#) > logging.lfe.mw.tum.de

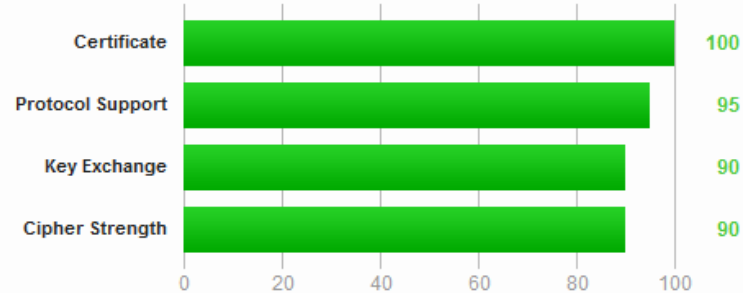
SSL Report: logging.lfe.mw.tum.de (129.187.135.4)

Assessed on: Wed, 16 Sep 2015 10:13:08 UTC | [Clear cache](#)

[Scan Another »](#)

Summary

Overall Rating



Visit our [documentation page](#) for more information, configuration guides, and books. Known issues are documented [here](#).

This server supports TLS_FALLBACK_SCSV to prevent protocol downgrade attacks.

Authentication



Server Key and Certificate #1

Common names	logging.lfe.mw.tum.de
Alternative names	logging.lfe.mw.tum.de tracks.lfe.mw.tum.de
Prefix handling	Not required for subdomains
Valid from	Fri, 05 Dec 2014 11:22:15 UTC

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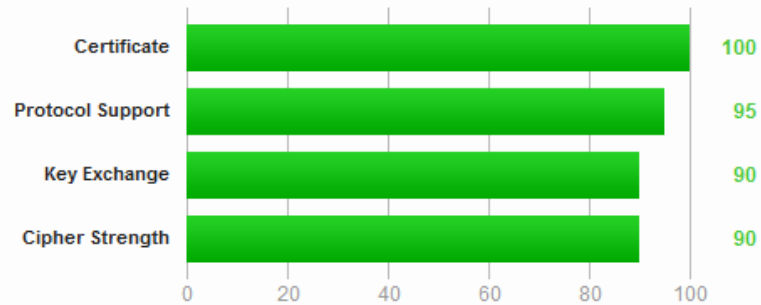
SSL Report: tracks.lfe.mw.tum.de (129.187.135.5)

Assessed on: Wed, 16 Sep 2015 10:30:56 UTC | [Clear cache](#)

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Summary

Overall Rating



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This server supports TLS_FALLBACK_SCSV to prevent protocol downgrade attacks.

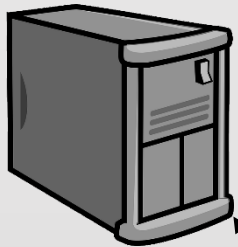
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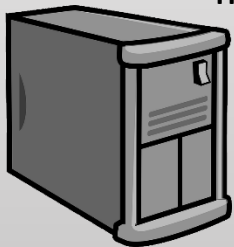
RoadAuth



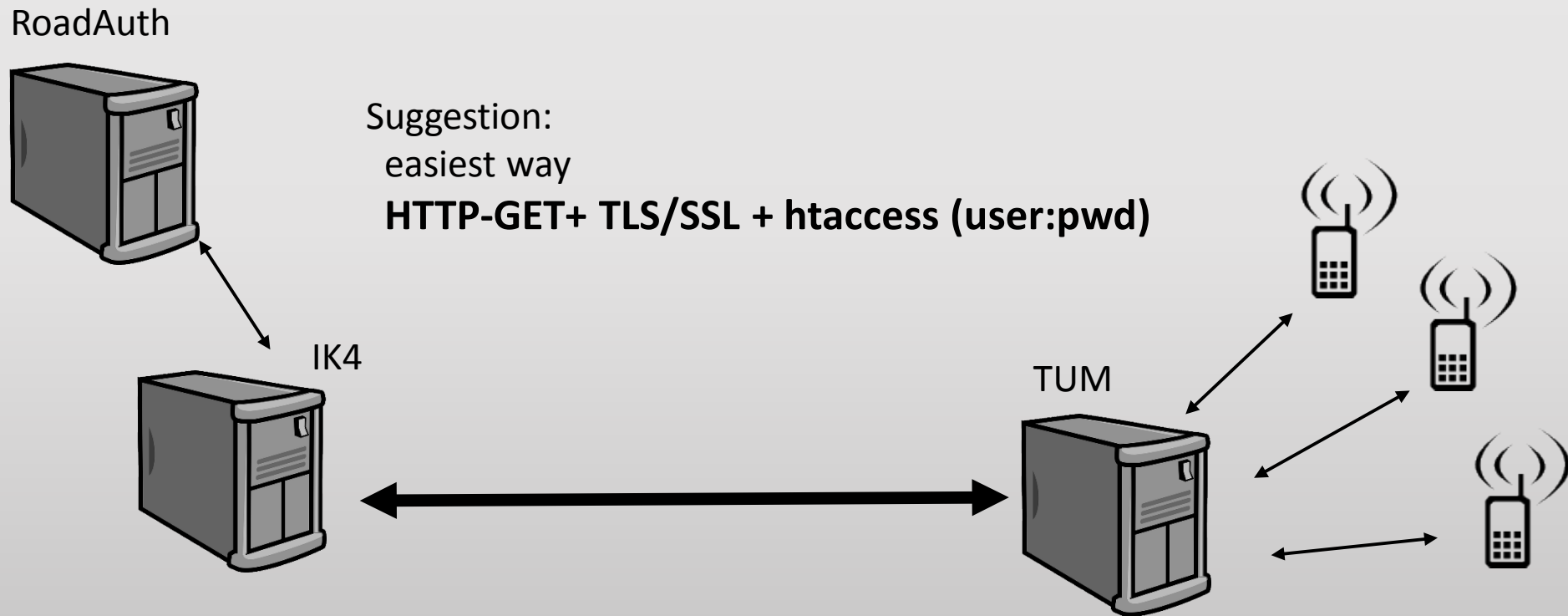
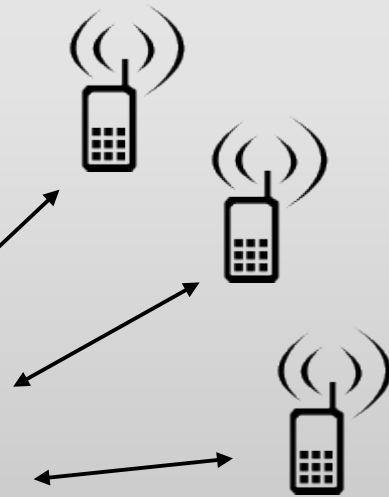
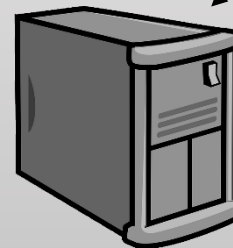
Suggestion:
easiest way

HTTP-GET+ TLS/SSL + htaccess (user:pwd)

IK4

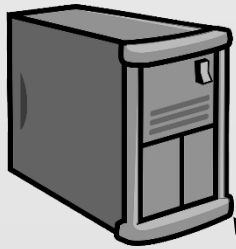


TUM

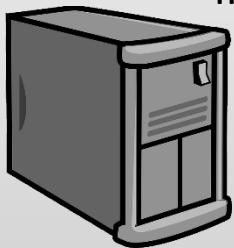


Transmit: A Car Stopped (TUM => IK4)

RoadAuth

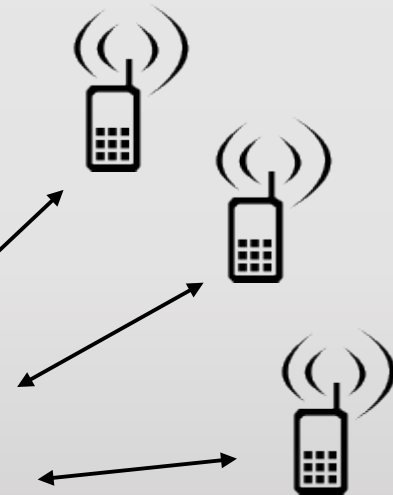
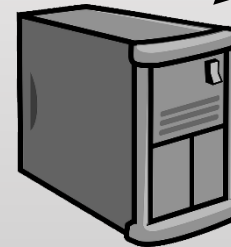


IK4



„GET“ but TUM transmit data in URL-parameters

TUM



HTTPS-GET (user:pwd)

[\\IK4\carstopped.script?gpslat=48.1212....](https://IK4/carstopped.script?gpslat=48.1212....)

parameters **to be defined**

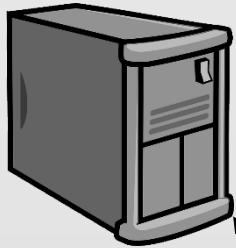
Who checks data plausibility(attack)? Simple check by TRV/IK4

HTTP-Statuscode = 200 => OK

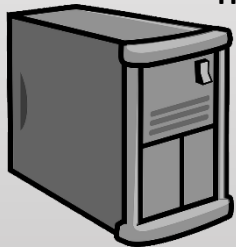
In case of != 200 => NOK; no repetition

Get All Signal Plans & Queue Lengths

RoadAuth



IK4

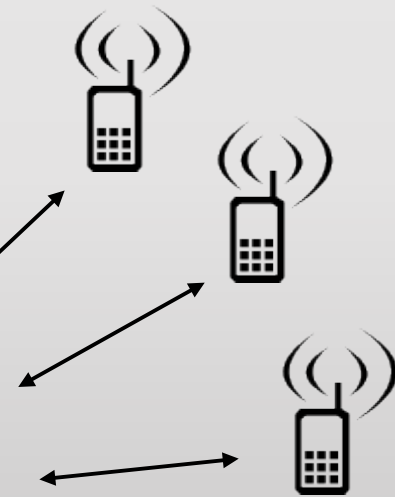
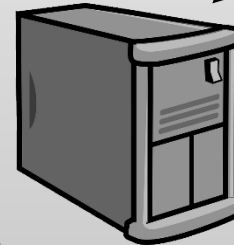


continious poll (*heartbeat, livesignal*)

HTTPS-GET (user:pwd)

[\\IK4\getData.script](https://ik4.getdata.script)

TUM



Data e.g. XML **to be defined**

To keep communication simple:

If something fails (whatever) send HTTP status code !=200

Proposed workflow within next days/weeks

- Check TLS/SSL (don't allow http) TUM ↔ IK4
- Check htaccess works
- Check \\IK4\\carstopped.script (mockup data but final parameter set)
- Check \\IK4\\getData.script (mockup data but final file structure)

Unclear to me/ open topics

- Common time (UTC?); daylight saving?
- Sync with traffic lights