

Microsoft CityNext

# EMPOWERING

Cities & Citizens

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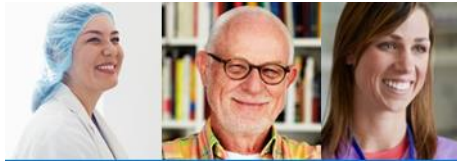
# Der Mensch im Mittelpunkt



Digitalisierung  
in Städten



Sicherheit  
in Städten



Gesundheit  
in Städten



Bildung  
in Städten



Nachhaltigkeit  
in Städten



# PARTNER MOMENTUM



# Lösungsbereiche



## Safer Cities

### Public Safety & Justice

- Call Center & Dispatch
- Catastrophe Modeling
- Community Policing
- Courts Management
- Digital Patrol
- Operational Intelligence
- Prison Management
- Video Management



## Healthier Cities

### Health & Social Services

- Population Health Management
- Remote Patient Monitoring
- Social Programs
- Virtual Health



## Educated Cities

### Education

- Classroom Devices for Learning
- Facilities Management
- Future-Ready Skills
- Learning Management Systems
- Physical Safety
- Predictive Analytics for Education



## Sustainable Cities

### Urban Mobility

- Connected Vehicle Analytics
- Disruption Management
- Fare & Toll Management
- Fleet & Asset Management
- Parking Management
- Traffic & Transit Optimization

### Energy & Water

- Atmospheric Air Quality Management
- Carbon Management
- Energy Distribution Management
- Water & Sewer

### Buildings, Infrastructure, Planning

- Land Management
- Sanitation
- Smart Buildings
- Street Lights



## Digital Cities

### Government Admin

- Citizen Services
- Connected Field Services
- Decision Management & Support
- Personalization
- Regulations, Licensing & Permitting
- Virtual Town Hall

### Government Finance

- Financial Management
- Fraud Detection & Prevention
- Grants Management
- Tax

### Tourism, Recreation, Culture

- Destination Management
- Sports & Events
- Tourism portals



**Economic Development Programs:** workforce reskilling, technology innovation, startup incubation

**Trusted Cloud Platform:** Modern Workplace + Business Applications + Apps and Infrastructure + Data and AI + Open Data + GIS



Optional:  
Kurzer «Theorieblock» mit einer  
Begriffserläuterung zu Thema «Cloud»

(aus unserer Perspektive 😊)

# CLOUD IST EIN MODELL, NICHT NUR EIN ORT



Provider datacenter

**Global:**  
Hyper-scale, globally connected cloud services deployed from regional datacenters.

Public



Partner datacenter

Cloud services deployed on dedicated resources, hosted or operated by a **Partner**. Provides integrated or industry-specific service offerings.

Hybrid



Customer datacenter

Deployed on **customer-dedicated resources** with products and technologies. Benefit from cloud experiences on your own premises.

Private









<http://natick.research.microsoft.com/>

## Microsoft and Facebook just laid a 160-terabits-per-second cable 4,100 miles across the Atlantic

*Enough bandwidth to stream 71 million HD videos at the same time*

by [Thuy Ong](#) | [@ThuyOng](#) | Sep 25, 2017, 7:56am EDT

<https://news.microsoft.com/features/microsoft-facebook-telxius-complete-highest-capacity-subsea-cable-cross-atlantic/>

## Microsoft just purchased all of GE's newest Irish wind farm capacity for the next 15 years

Posted Oct 9, 2017 by [Ron Miller \(@ron\\_miller\)](#)



AdChoice

### NEWSLETTER SUBSCRIPTIONS

- The Daily Crunch**  
Get the top tech stories of the day delivered to your inbox
- TC Weekly Roundup**  
Get a weekly recap of the biggest tech stories
- Crunchbase Daily**

Microsoft [signed an agreement with GE today](#) to purchase every last bit of the wind energy from GE's brand-new 37-megawatt Tullahennel wind farm located in County Kerry, Ireland for the next 15 years.

<https://news.microsoft.com/2017/10/09/microsoft-ge-sign-agreement-on-new-wind-project-in-ireland/>

## Microsoft partners on world's first gas-powered data center, in Seattle neighborhood

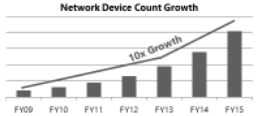
Sep 27, 2017 | [Deborah Bach](#)

<https://blogs.microsoft.com/firehose/2017/09/27/microsoft-partners-on-worlds-first-gas-powered-data-center-in-seattle-neighborhood/>

# Hyperscale Cloud

## Hyperscale Cloud Computing ist NICHT gleich zu setzen mit Outsourcing!

### Growing Microsoft's networks to hyper-scale



**Geo-Redundant Service/Application Design**

- All nodes active
- Peer with over 3000 ISP's globally

**Top 2 Most Connected Networks in the World**

- Multiple Terabits
- Over 50 Points of Presence globally
- Global backbone connecting MS Datacenter to the internet

**DC-to-Internet Backbone**

- Multiple Terabits of Capacity
- Dark fiber based DC-DC backbone to enable high bandwidth between Datacenters

**DC-to-DC Backbone**

- Tens of thousands of Route Miles of owned Dark fiber backbone
- Million+ 100G DWDM Route Miles of capacity deployed

**Dark Fiber**

- Hosting Services collocated at User location (metro)

**Cache Node**

- Multiple Terabits of Edge interconnect capacity
- Directly connected to more than 2000 networks with over 4,000 connections

**Edge Nodes**

- Separation of Compute, Storage, DB Services

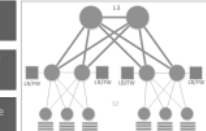
**Decoupled DCs**

- IT Capacity Unit = STAMP
- DC Capacity Unit or Workload Appliance

### Classic network vs. Hyper-scale architecture

**Classic network**

- Large L2 domains
- HW-based service modules
- Simple Tree design



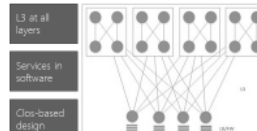
**Agility**: Low due to diversity and manual provisioning process

**Efficiency**: Low due to complex hardware and lack of automated operations

**Availability**: Low due to high complexity and human error

**Hyper-scale architecture**

- L3 at all layers
- Services in software
- Clos-based design

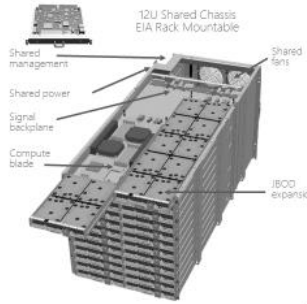


**Agility**: Automated network provisioning, integrated process

**Efficiency**: Simplified requirements, optimized design, unified infrastructure

**Availability**: Resilient design, automated monitoring and remediation, minimum human involvement

### Microsoft cloud server



- Shared infrastructure for efficiency and TCO optimization
- Network and storage connectivity via blind-mate backplane architecture
- Workload enablement via add-on cards
- Secure, scalable and extensible systems management
- Available to all via Open Compute Project Open CloudServer v2 spec

	Enterprise IT		Hyper-Scale		Enterprise IT		Hyper-Scale
Seats	10,000	→	1,000,000,000	Hardware	Custom	→	Commodity
Talent	Custodians	→	Designers	Deployment	Manual	→	Automated
Data Quality	Directional	→	Foundational	Availability	Infrastructure	→	Service
Data Access	Pull	→	Push	Operability	MTBF	→	MTTR
Assessment	Physical	→	Statistical	Reliability	Hardware	→	Software
Supply Chain	Process	→	Strategic	Security	Audit	→	Intrinsic
Budget	Fixed Cost	→	Rates	Network downtime	Impacting	→	Irrelevant
Architecture	Siloed	→	Integrated	Network availability	99.999%	→	99.9%
Application integration	Loose	→	Tight	Design	Primary/Backup	→	Active/Active
Infrastructure	Overhead	→	Enabler	Deployment time	Weeks	→	Minutes
Reach	Regional	→	Global	System admin	UI	→	API
				Legal	Outsourcing	→	Standard Contractual Clauses



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

## Eidgenössisches Justiz- und Polizeidepartement EJPD

Startseite EJPD > Aktuell > News > 2016 > Mehr Transparenz und stärkere Kontrolle über die eigenen Daten

< News

2016

# Mehr Transparenz und stärkere Kontrolle über die eigenen Daten



Schlagwörter: [Datenschutz](#)

Medienmitteilungen, Der Bundesrat, 21.12.2016

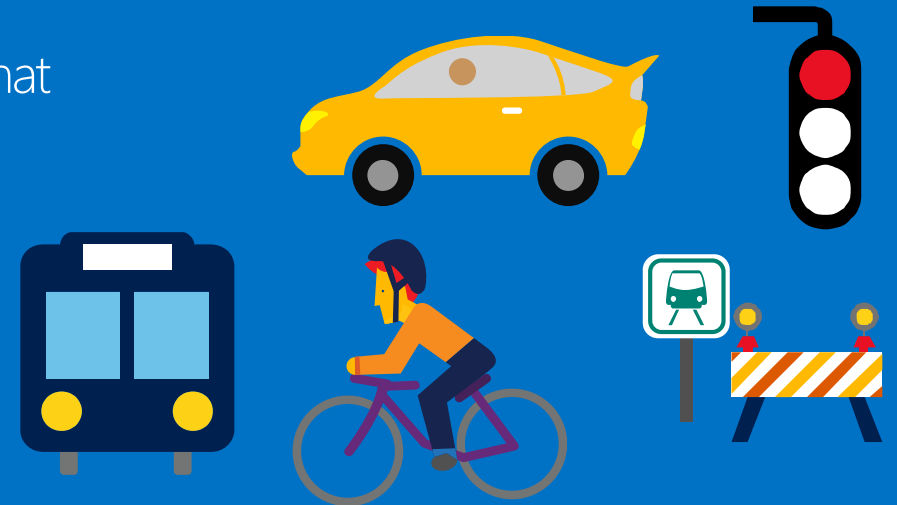
**Bern. Der Bundesrat will den Datenschutz stärken und an die veränderten technologischen und gesellschaftlichen Verhältnisse anpassen. Er hat an einer Sitzung vom 21. Dezember 2016 den Vorentwurf zu einer Totalrevision des Datenschutzgesetzes (DSG) in die Vernehmlassung geschickt. Die Revision schafft auch die Voraussetzungen dafür, dass die Schweiz die Datenschutzkonvention des Europarates ratifizieren und die EU-Richtlinie über den Datenschutz im Bereich der Strafverfolgung übernehmen kann. Damit stellt der Bundesrat sicher, dass die grenzüberschreitende Datenübermittlung weiterhin möglich bleibt.**

neue EU-Datenschutz  
Grundverordnung  
(Mai 2018), neues CH  
Datenschutzgesetz....

# Smart City Bad Hersfeld

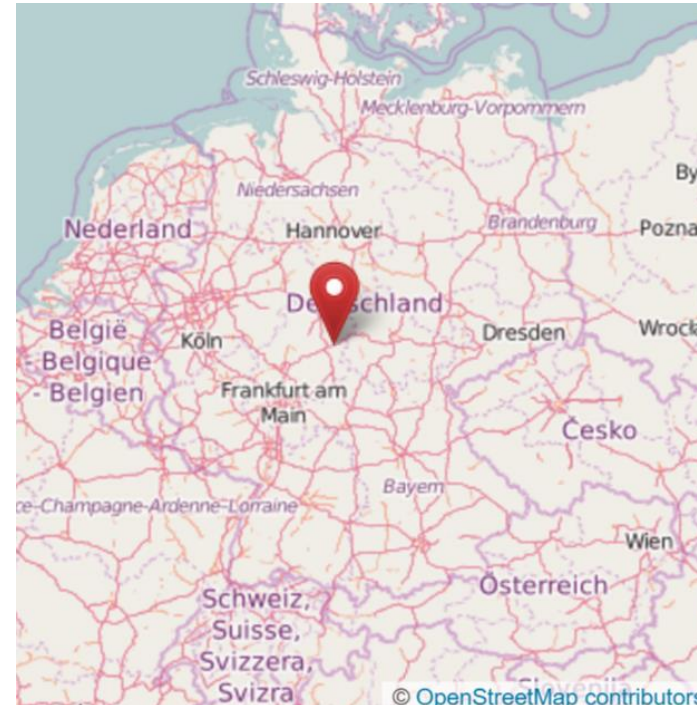
<https://badhersfeld.urbanpulse.de/#/tiles/>

<https://www.kommunalmagazin.ch/informatik/smart-geht-auch-im-kleinformat>



# Einführung Bad Hersfeld

- 30.000 Einwohner, Im Zentrum Deutschlands
- Verschiedene Hauptverkehrsstraßen (Autobahnen A4 and A7, Bundesstraßen B27, B62 and B324) kreuzen sich in Bad Hersfeld; 30.000 Pkw/Lkw pro Tag am zentralen Schnittpunkt
- Alle drei Minuten Züge der Bahn-Linie Fulda-Leipzig
- Alle großen Logistik-Anbieter haben ihre zentralen Verteilzentren in Bad Hersfeld oder in der Nähe.
- “Latest drop-off time” in Deutschland; innerhalb von vier Stunden können alle deutschen Regionen bedient werden.



# Smart City-Themenfelder

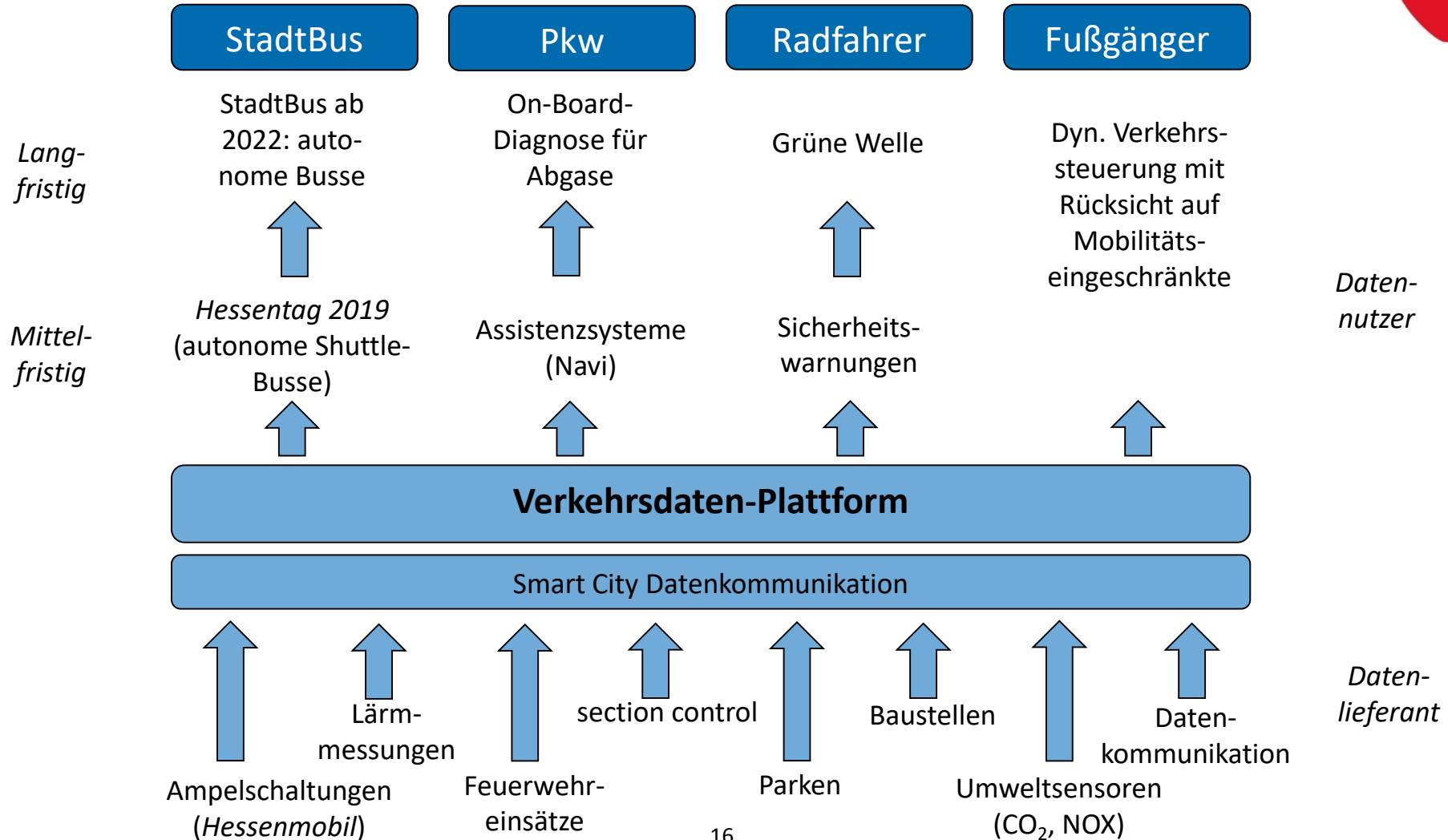
1. Verkehr
2. Energie
3. Stadtmarketing
4. (Gesundheit/Sicherheit)

## Bad Hersfelder These

- Städtische Infrastrukturen sind ein wertvolle Ressource
- Zukünftig entstehen neue Geschäftsmodelle, bei denen städtische Daten eine entscheidende Rolle spielen
- Die Städte sollten sich „von dem Kuchen“ unbedingt eine Scheibe abschneiden, um mit den Erlösen die Modernisierung der Infrastruktur zu finanzieren.

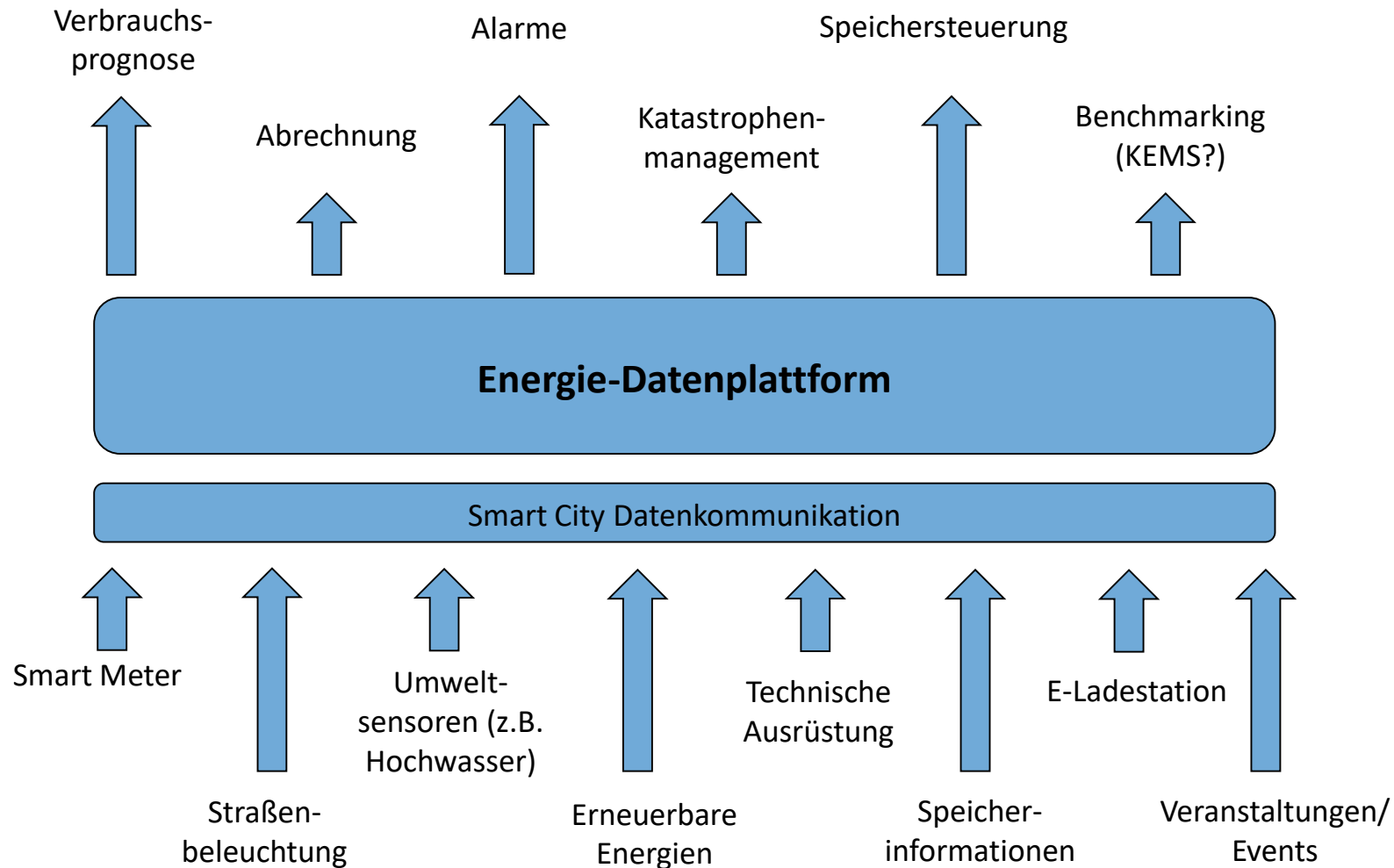
# Smart City Bad Hersfeld

## Verkehr

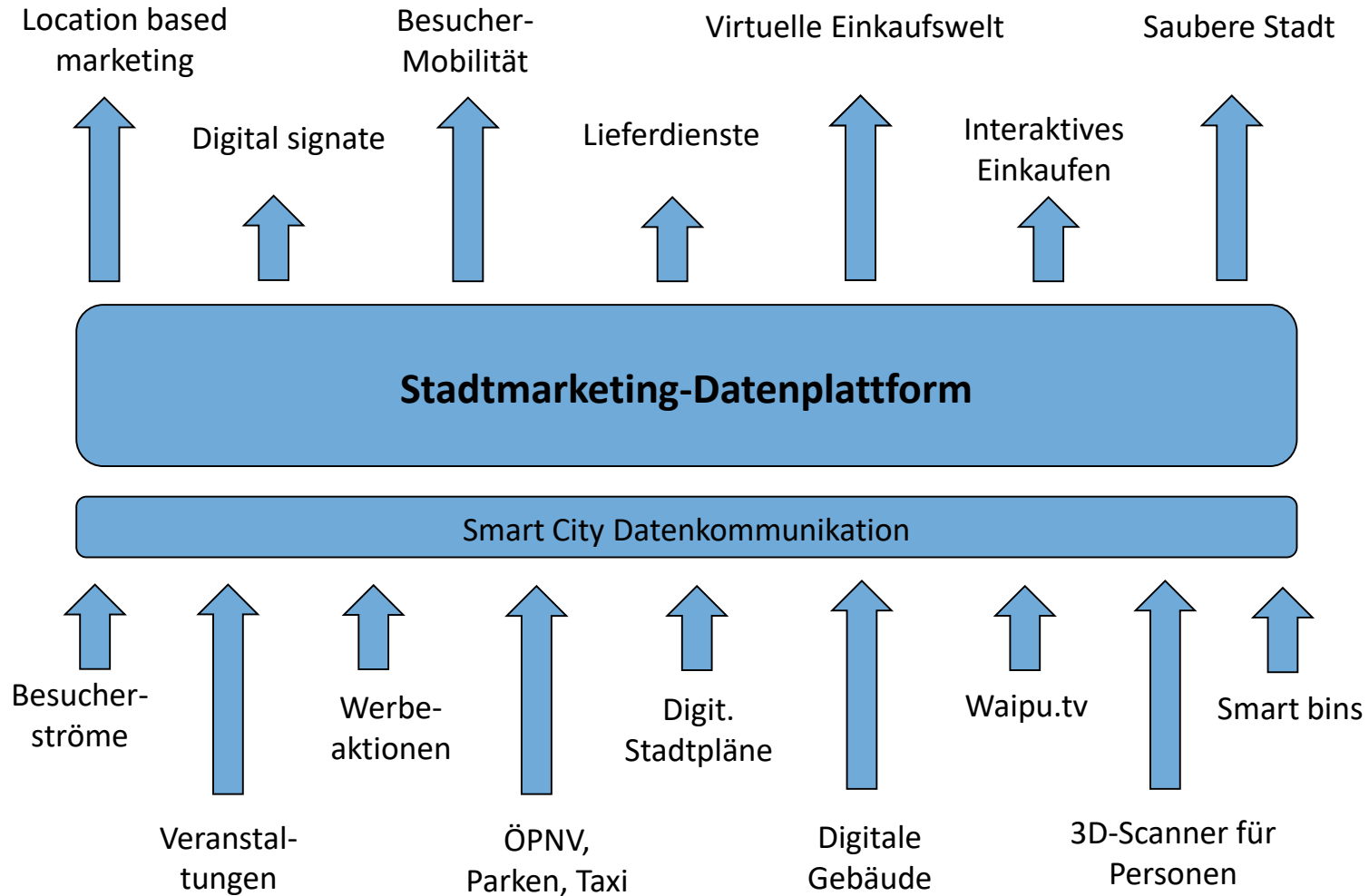




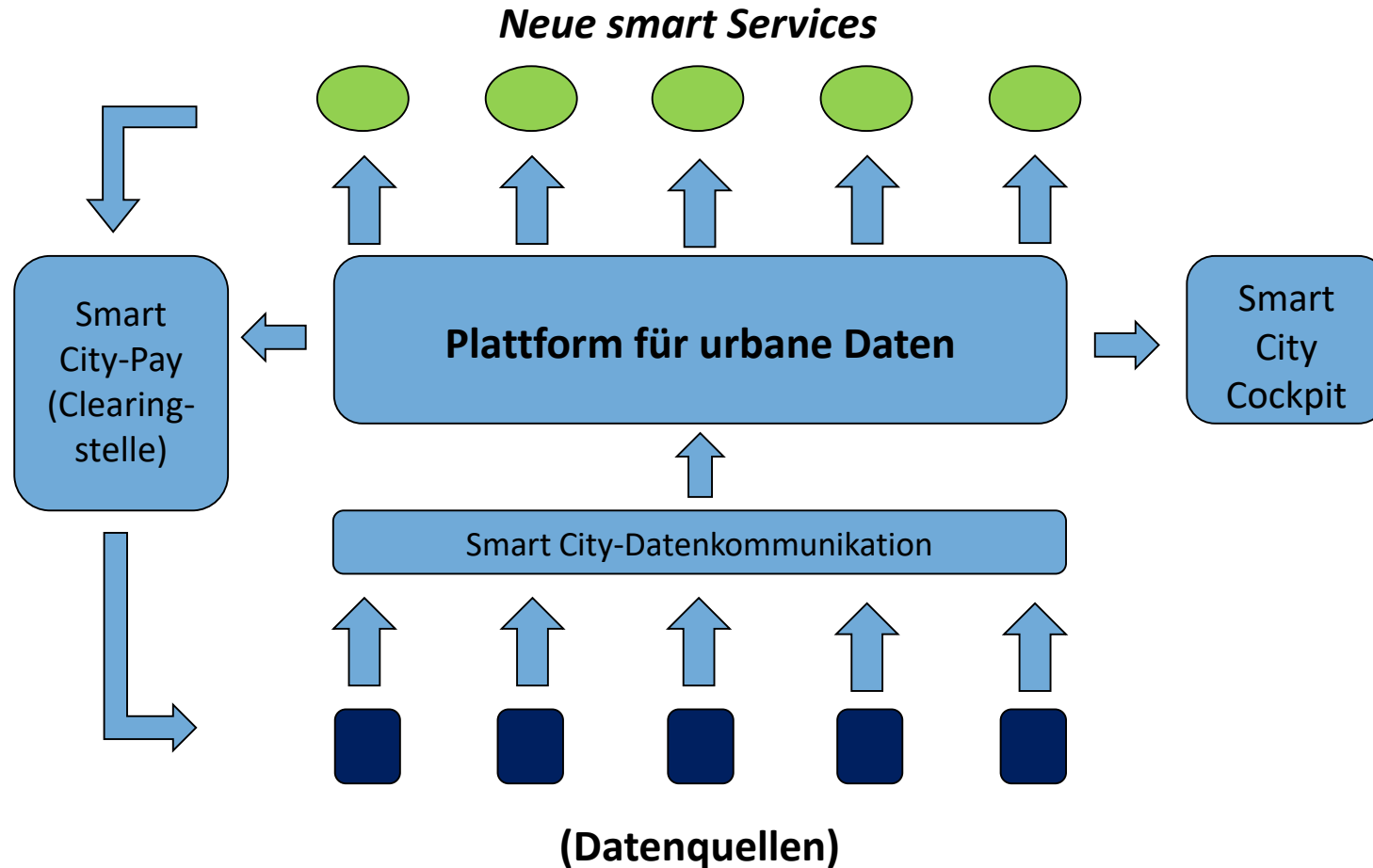
# Smart City Bad Hersfeld Energiemanagement



# Smart City Bad Hersfeld Stadtmarketing



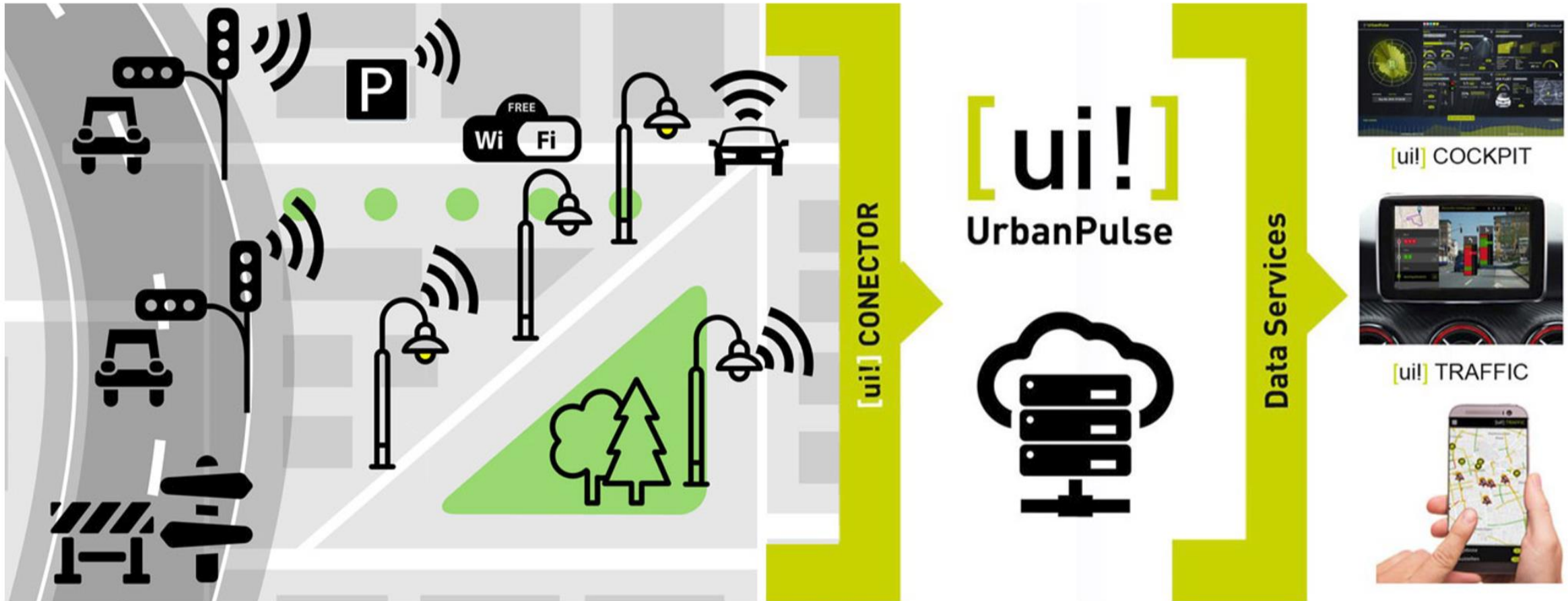
# Smart City Bad Hersfeld Technologieschema



# Die Plattform



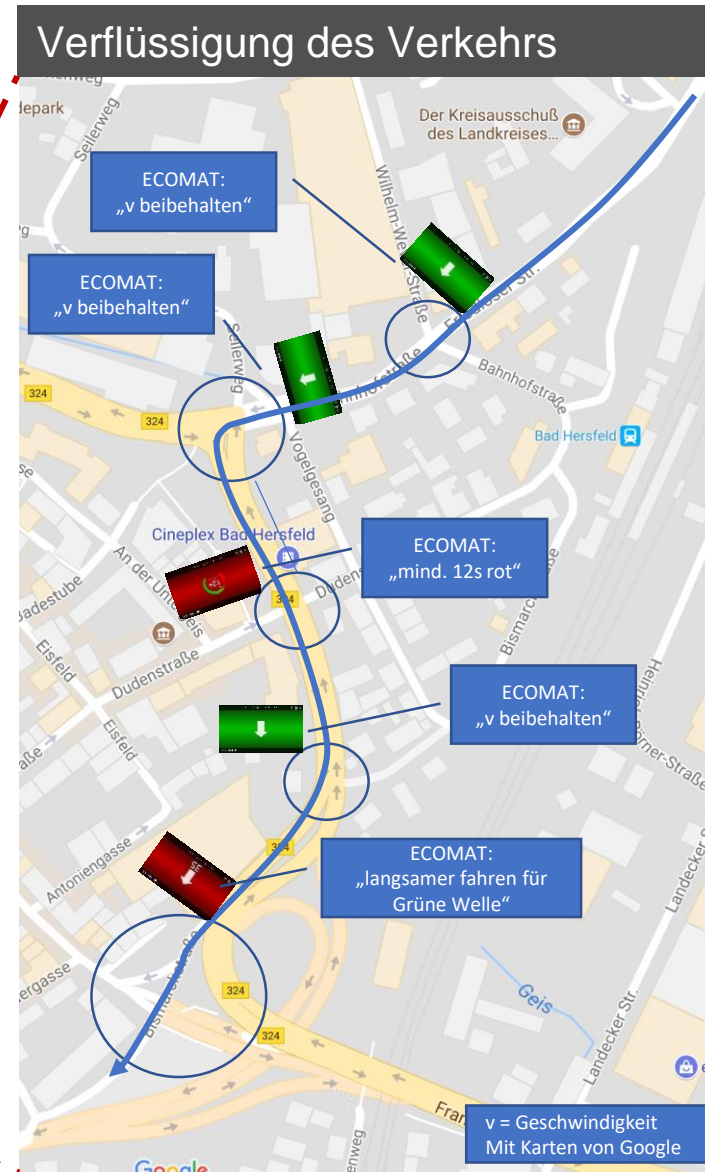
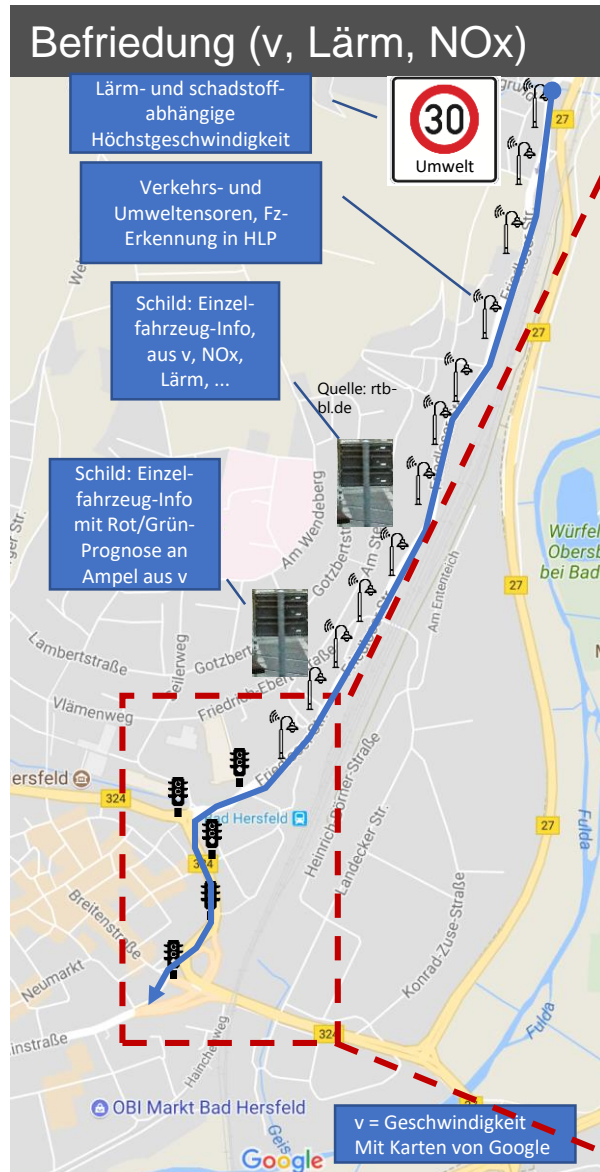
# Urban Pulse



# Beispiel Bad Hersfeld



# Geplante weitere Projekte



## Aktuelle Probleme

- Sehr hohes Verkehrsaufkommen, Überlastung und Rückstau
- Belastung der Anwohner durch Schadstoffe (NOx) und Lärm
- Nachts Missachtung der zulässigen Höchstgeschwindigkeit: Lärm und Unfallrisiko.
- Schlecht koordinierbare LSA auf dem Innenstadtring
- Bei Überlastung Rückstau in den nördlichen Bereich des Innenstadtrings

# Darmstadt





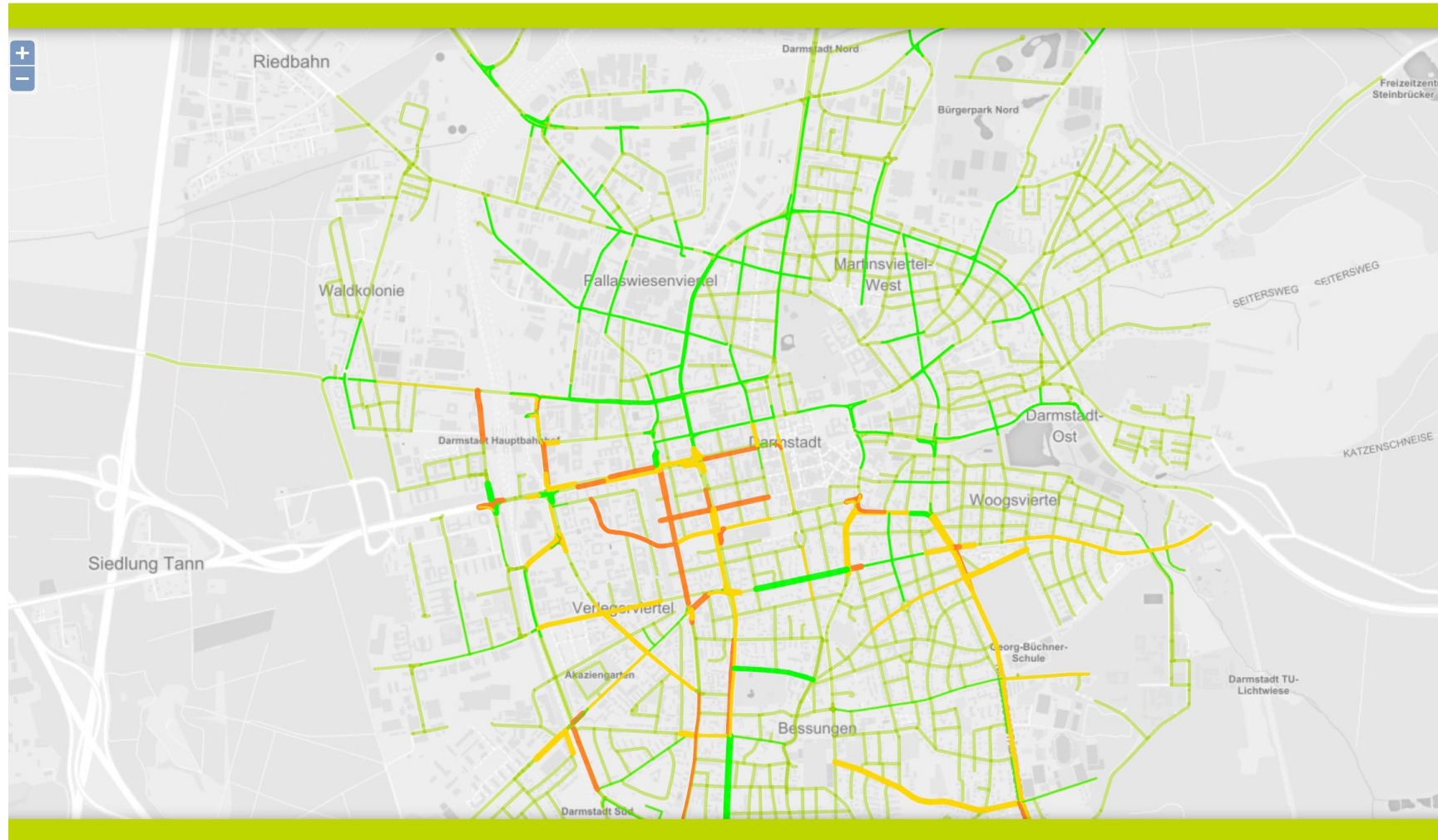
# Beispiel Verkehrsplattform

Urban[traffic!]Pulse



Wählen Sie einen Zeitpunkt (UTC), um die Auslastung der Kreuzungen anzuzeigen.

25.01.2018 08:45 Uhr



# "Open-Steuerzahler-Data" - Ansatz



# Ökologisches Fahren & Einnahmequelle



Fahrzeug verringert Tempo  
Ecomat empfiehlt 35 km/h



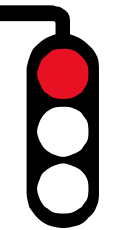
Fahrzeug fährt 35 km/h  
Ecomat zeigt ökologisches Fahren





# Fazit

- It's all about Plattform
- Integration von bestehenden Daten Silos schaffen erst den Mehrwert
- cleverer Einsatz von Opendata zum Wohle der öffentlichen Finanzen
- Bürgerpartizipation und Nutzen von zentraler Bedeutung
- Paradigmawechsel im Verwaltungsumfeld von «never fail» zu «fail fast»!



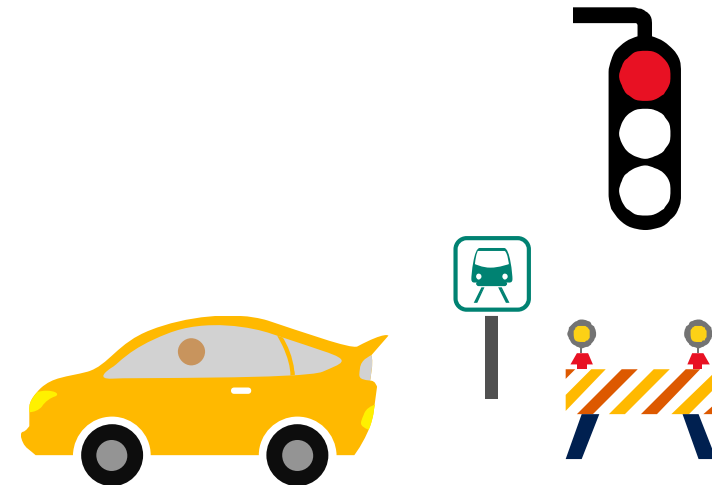
# Ressourcen

## Microsoft:

- Cloud Plattform Azure: <https://azure.microsoft.com/de-de/>
- IoT: <https://www.microsoft.com/de-ch/internet-of-things>
- Microsoft CityNext: <https://enterprise.microsoft.com/de-ch/industries/government/citynext/>
- Sicherheit und Transparenz in der Cloud: <https://www.microsoft.com/de-de/trustcenter>

## Urban Institute: [www.ui.city](http://www.ui.city)

- UI Demoportale:
- Bad Hersfeld: <https://badhersfeld.urbanpulse.de/#/tiles/>
- Generisch (u.a. Darmstadt): <https://openplatform.urbanpulse.de/#/tiles/>



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