

# From Zero to Useless to Hero

Make Runtime Data Useful in Teams

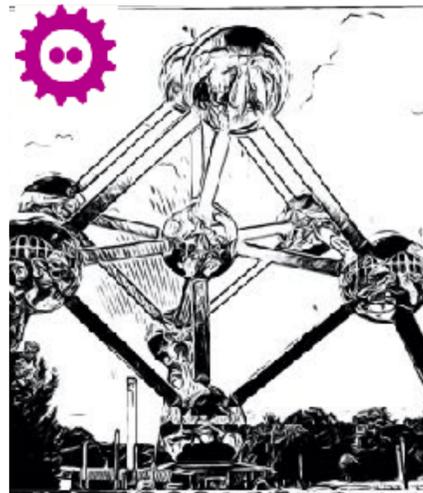
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FOSDEM 2020

Contact us if you want. =)

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# “Hallo Magenta”

Building a  
European Voice  
Assistant  
Platform



From Zero to

**1**  
international  
co-development

**> 900**  
collaborators

**> 500**  
active git repos

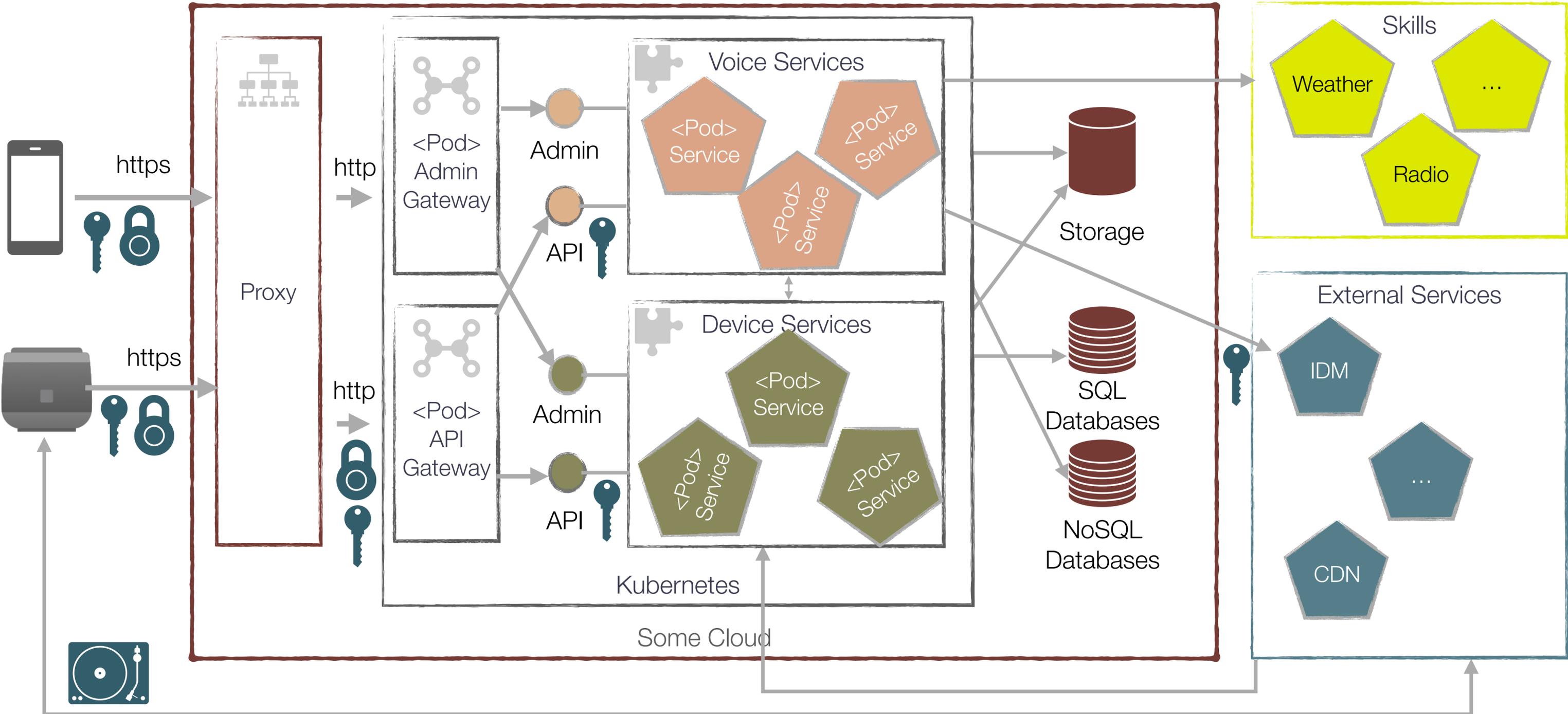
**> 100**  
services



T=Zero



# Complex Architecture. Complex Software System. Complex Analysis.



# Advanced toolchain needed. Standard used.

Metric  
sampling-based

**NEW:**  
**Grafana**  
**Cloud**



Textual  
event-based

**NEW:**  
**Humio**

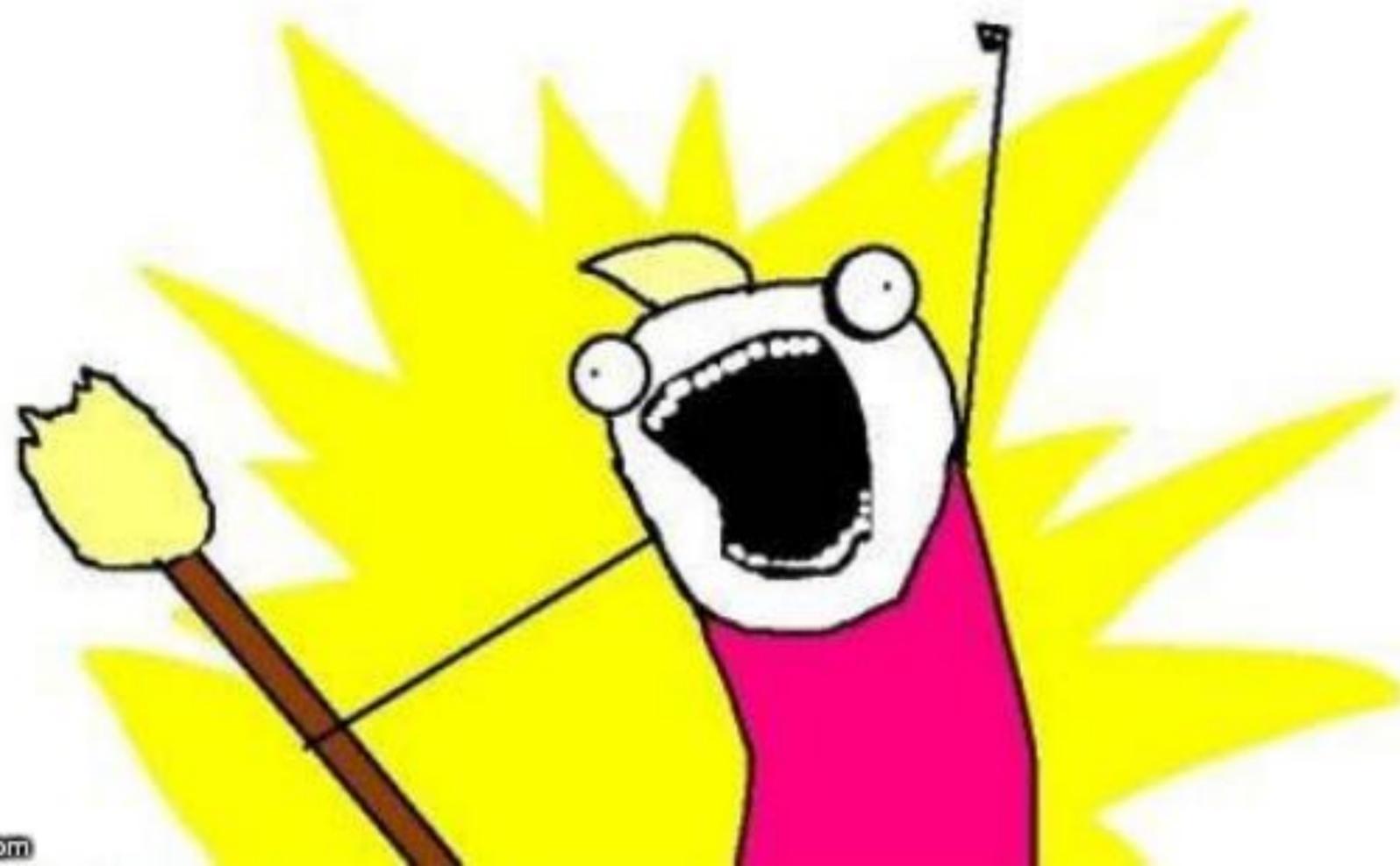


Span  
event-based

**NEW:**  
**Jaeger**



**STANDARDIZE ALL THE THINGS**



# Generic-Standard-Runtime-Data-Smarthub-Service-Data-Model

**TraceId in every Response**

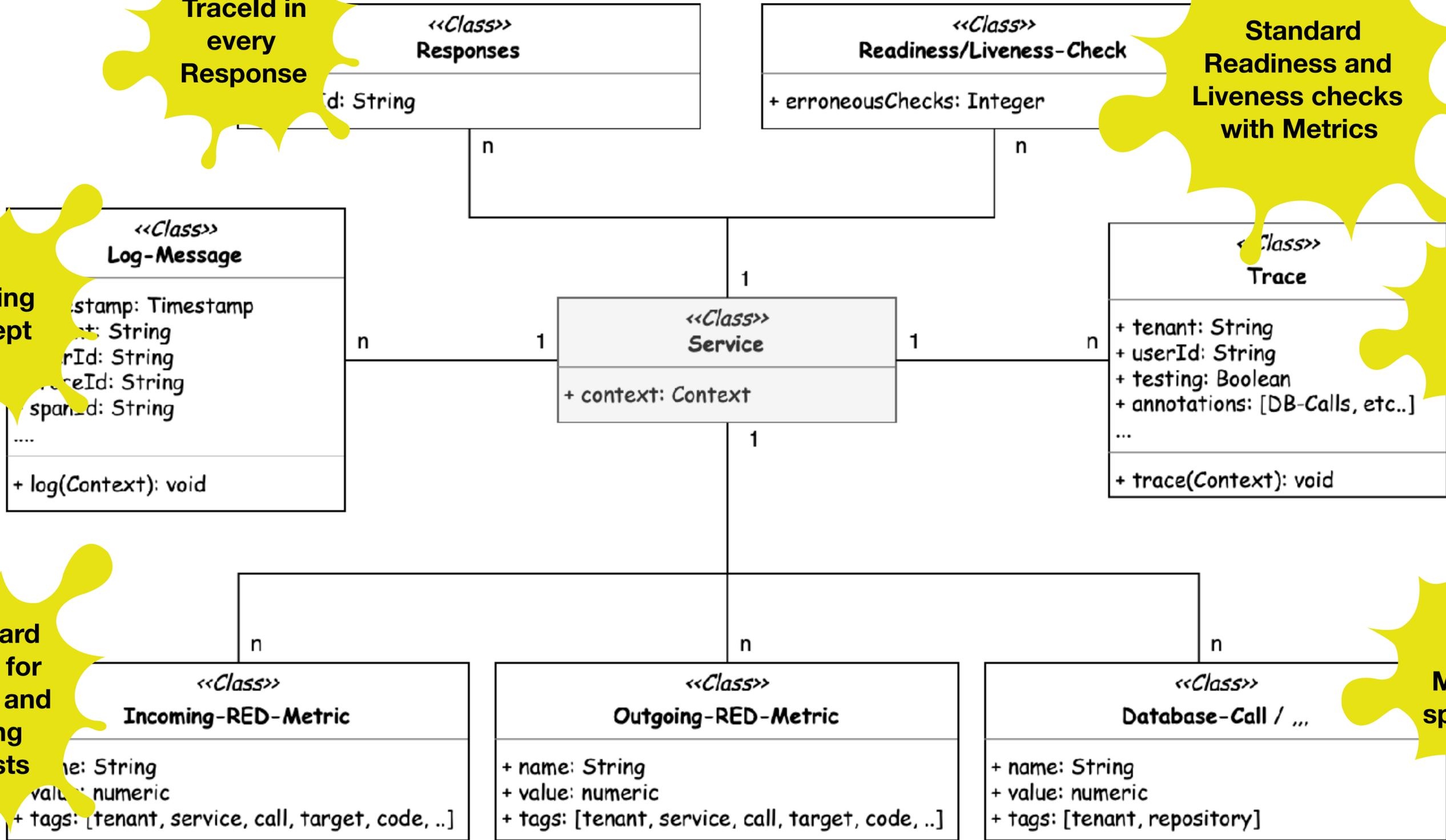
**Standard Readiness and Liveness checks with Metrics**

**Logging Concept**

**Tracing Best-Practices**

**Standard Metrics for incoming and outgoing Requests**

**Standard Database Metrics and specific ones.**



“Done. This solves all our problems. They will  it!”

– We, the ignorant ones

# Our team: Colorful.

Mobile  
Developers



Platform  
Developers

Tester



Production  
Management



Skill  
Developers

Data  
Scientists



First Level  
Support

Operation  
Heros



# Our solution: Monochrome.

Mobile  
Developers



Platform  
Developers



Skill  
Developers

Tester



Production  
Management



Data  
Scientists



First Level  
Support



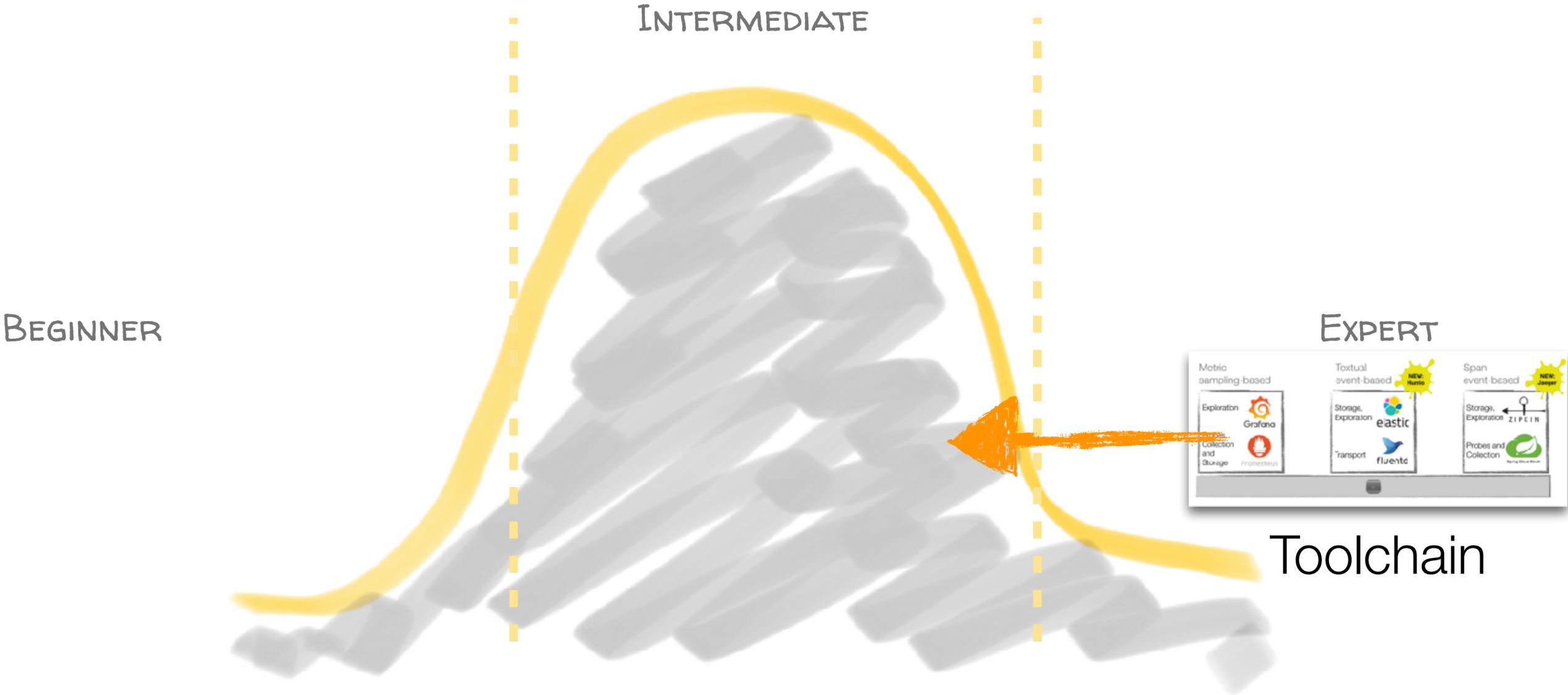
Operation  
Heros

A black and white photograph of a large iceberg with a natural archway. The iceberg is the central focus, with a large, irregular hole through its center. The ice has a textured, crystalline appearance. The background is dark, making the white ice stand out. The water in the foreground is dark with some ripples.

T=Useless

Because we are monochrome

Nobody wants to be a Beginner. Optimize for Intermediate.



ABOUT FACE - ALAN COOPER

What we did to move our solution from expert to intermediate.

**Useful = Utility + Usability.** 🤔

**Utility:** whether it provides the features you need.

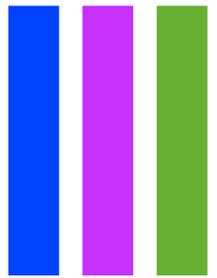
✅ You can find all the information...

**Usability:** how easy & pleasant these features are to use:  
*Learnability, Efficiency, Memorability, Error Handling, Satisfaction.*

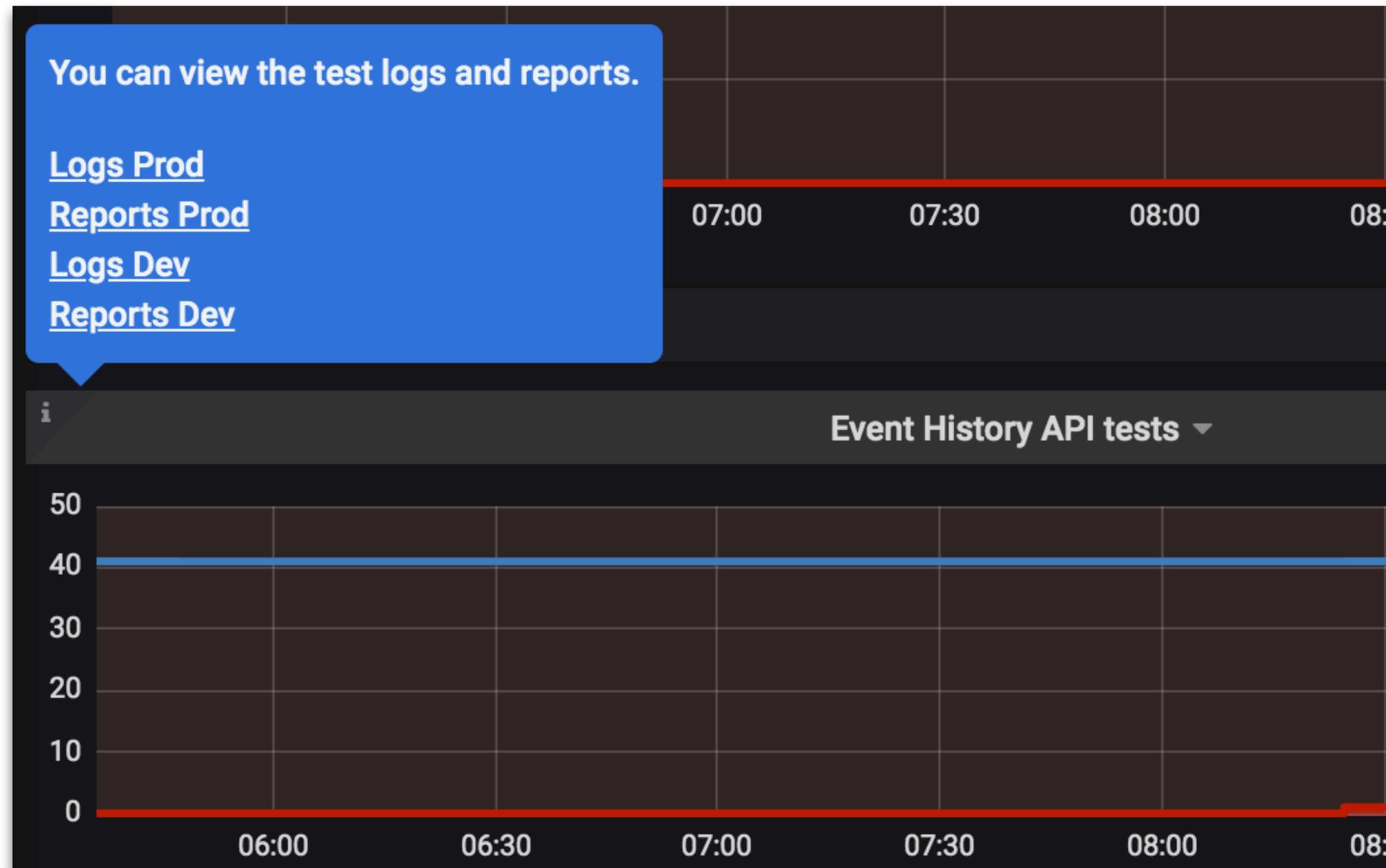
❌ ... if you really know how and where to look (as an Expert).

Usability 101 - Jakob Nielsen

<https://www.nngroup.com/articles/usability-101-introduction-to-usability/>



Close Gaps: Link data and tools as much as possible.



*Dashboards with links to **logs** and **e2e test runs***

Close Gaps: Link data and tools as much as possible.

	platform-edge	skill-edge
<input type="checkbox"/>	<ul style="list-style-type: none"><li>• Gangway</li><li>• Preview</li></ul> <p>Redeploy</p> <p>Promote selected</p>	<ul style="list-style-type: none"><li>• Gangway</li><li>• Preview</li></ul> <p>Redeploy</p> <p>Promote selected</p>
<input type="checkbox"/> admin_management	<p>Status</p> <p>19-12-11 16:14</p> <p>Promote</p>	<p>Status</p> <p>20-01-20 07:34</p> <p>Promote</p>
<input type="checkbox"/> conversation_history	<p>Status</p> <p>19-12-11 16:15</p> <p>Promote</p>	<p>Status</p> <p>19-08-26 13:33</p> <p>Promote</p>



*Pipeline UI - promote software and get **runtime data***



# Close Gaps: Link data and tools as much as possible.

admin\_management
platform-edge x

**Target State**

Updated at 19-12-11 16:14  
[promotor-configs/output/platform-edge/admin\\_management](#)

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Deployment	Image Tag
admin_management	1.0.1-snapshot_06c5f051_857322

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**Cluster State**

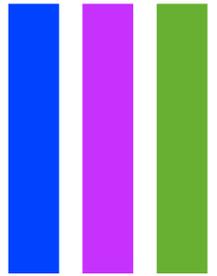
Tooling links:

- [Kibana](#)
- [Jaeger](#)

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Pod	Image Tag	Created	Restarts	Ready
admin-management-687ffd6d74-4r7lm <a href="#">Dashboard</a>	1.0.1-snapshot_06c5f051_857322	20-01-13 10:19	0	true
admin-management-687ffd6d74-vp9l6 <a href="#">Dashboard</a>	1.0.1-snapshot_06c5f051_857322	20-01-13 10:21	0	true

*Pipeline dashboards with **logs**, **traces***



Close Gaps: Link data and tools as much as possible.

Welcome Robert Hoffmann

Useful links

- [Kubernetes Dashboard](#)
- [Grafana](#)
- [Jaeger](#)
- [Kibana](#)
- [Kibana Conversation History](#)
- [Prometheus](#)

Search by Traceld in Jaeger/Kibana

Insert Traceld and either click Jaeger or Kibana.

Traceld:

5fcac09efbe83171

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[Search Jaeger](#)

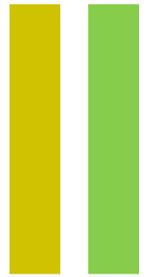
[Search Kibana](#)

Search by UserId in Jaeger/Kibana (only for CVI-Core)

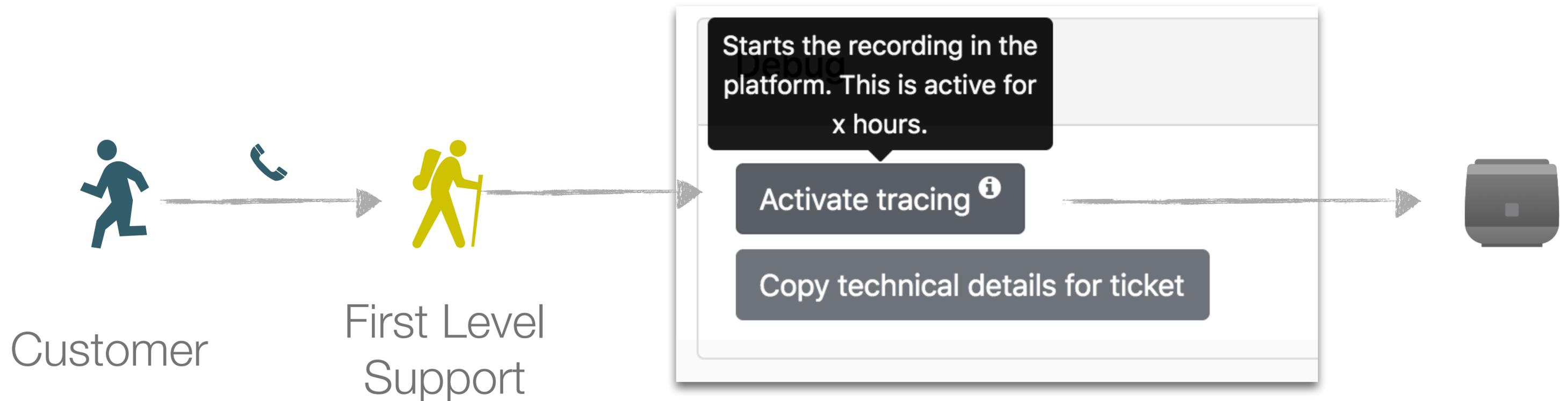
Insert UserId and either click Jaeger or Kibana.

UserId:

*Gangway landing page to access **k8s, logs, traces, metrics***



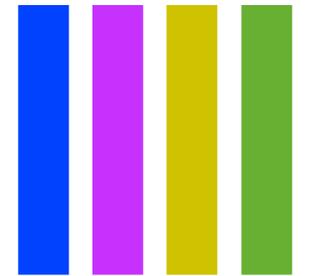
# Make functional use: First-level support integration.



***GDPR-aware debugging in production:***  
*Token-based user-specific debug logging and tracing*

# Make functional use: Resolving Tickets more easily.

DEVELOPER-, TESTER-,  
FIRST-LEVEL-, &  
OPERATIONS-ORIENTED



Smart Hub Test / SHTEST-710

## SVH-10012: Asking for public holidays doe

Edit Comment Assign More In Progress Todo Do

### Details

Type:	Dev Bug	Status:
Priority:	Critical (High)	Resolution:
Affects Version/s:	E2E-Test	Fix Version/
Labels:	None	

### Description

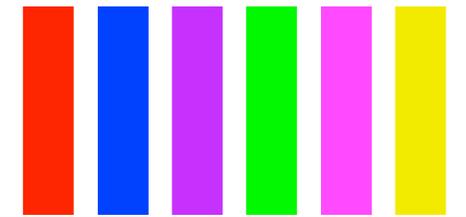
When using the phrase "Wann haben wir..." for asking about public holidays ther

I found the following error Jaeger / Kibana:

"Dispatcher model SVH\_STAGING\_\_DISPATCHER failed to resolve intent for te

**trace-id: 74d7bae540bfc05b**

Referencing **Trace IDs** as a **common base** to **discuss** and **find relevant data**



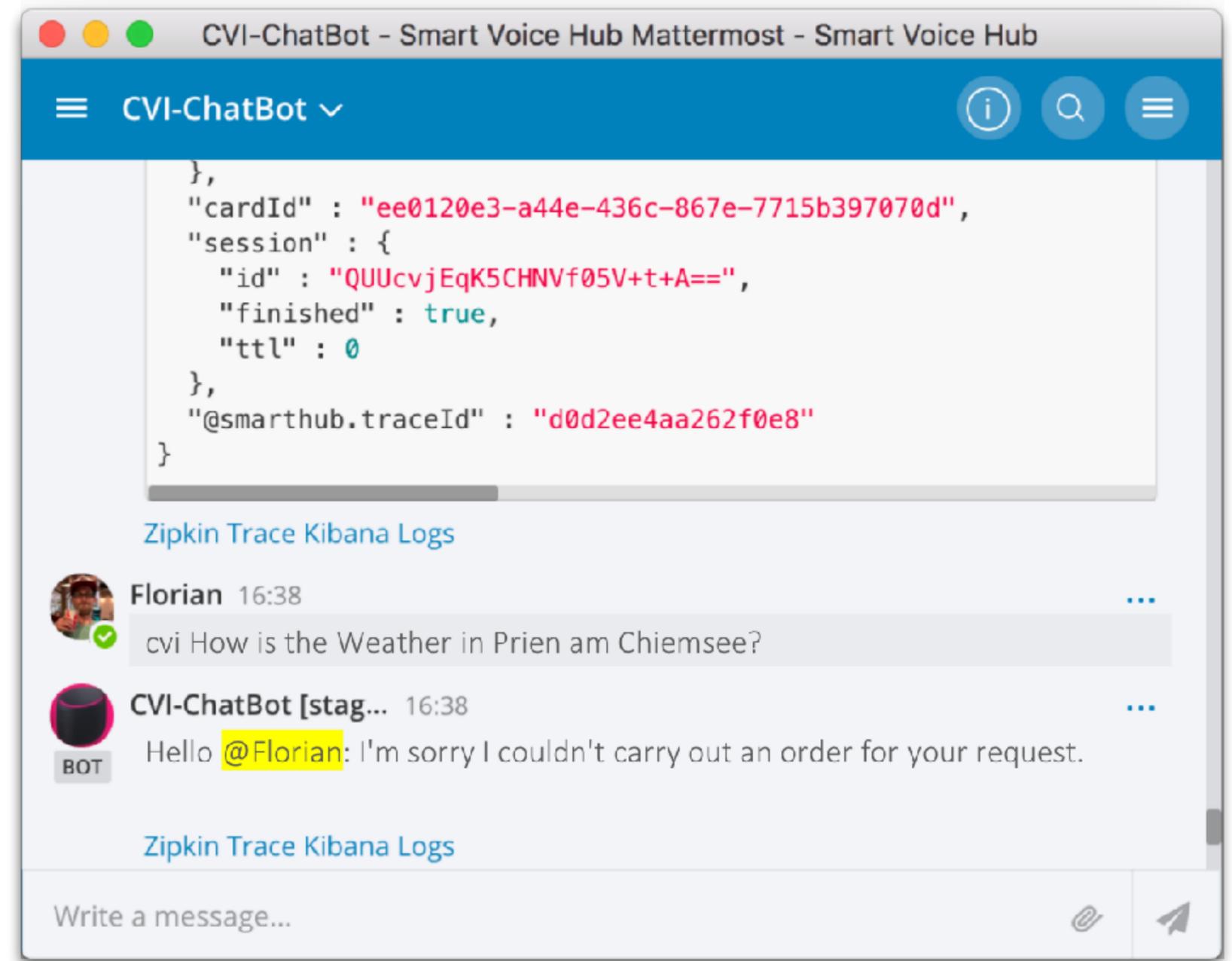
## Lower the access hurdle: CLI & Chatbot integration.

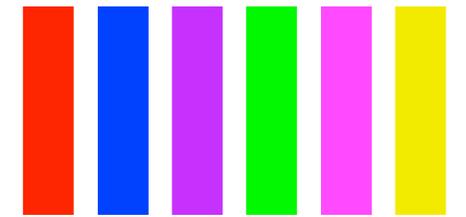
Any project member has **easy access**.  
Just open your chat.

Anyone can **learn by example**.  
See how others use the service.

Support in case of an **error**.  
By others or technical:

- **Trace**: Request Trace
- **Logs**: Request Application log





# Changes in the culture that we have recognized.

**Visibility and Increased Trust:** Toolchain acts as a safety-net as it shows the runtime behavior.

*People can be sure to understand their services, e.g. in case of an error.*

**Self-Awareness:** Accept and understand that software has a runtime behavior.

*Not all developers feel comfortable with dynamic analysis, but now they have means to see and understand.*

**Clear Communication:** Inner & cross-team communication is easier.

*Different people can easily share the same context, e.g. trace-Id, log messages, request flow.*

**Error Culture:** Failures are more easily accepted.

*As the software system is visible and the cross-team communication is clear, people tend to accept failures and work together on solutions.*

**Ownership:** Increased acceptance is the foundation for end-to-end responsibility.

*Due the disability and increased trust, clear communication and error culture, people are more inclined to take ownership for their services.*

T=Hero



***HERO PROJECT***

Because we are a little bit colorful

SELECT  
TOOLCHAIN &  
STANDARDIZE  
METRICS, LOGS,  
TRACES

LINK AND  
COMBINE  
THEM AS FAR  
AS POSSIBLE

INTEGRATE  
THEM INTO  
EVERYDAY  
TOOLS &  
PROCESSES

START HERE

TOOLS YOUR TEAM

