

Advanced systems for prevention and early detection of forest fires



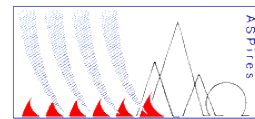
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ASPIres

Images from: <https://unsplash.com>

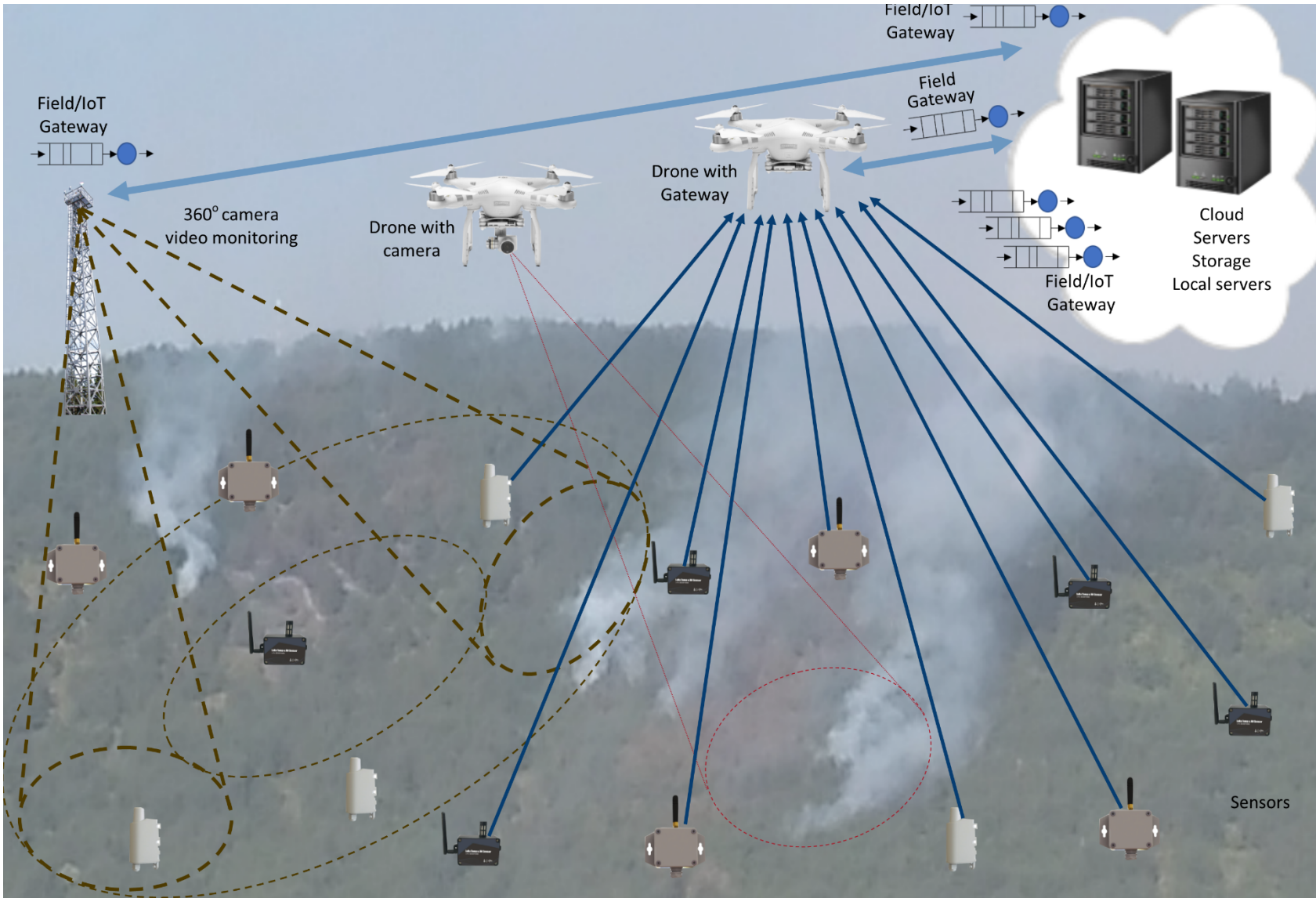
End-user Application for Forest Fire Detection and Prevention

**Peter PEINL, Micha HEIDERICH, Ivan CHISTOV,
Jugoslav ACKOSKI, Nikola KLETNIKOV,
Igorche KARAFILOVSKI, Nikola MANEV,
Rossy GOLEVA, Alexander SAVOV,
Ivelin ADREEV**

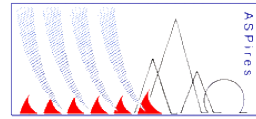


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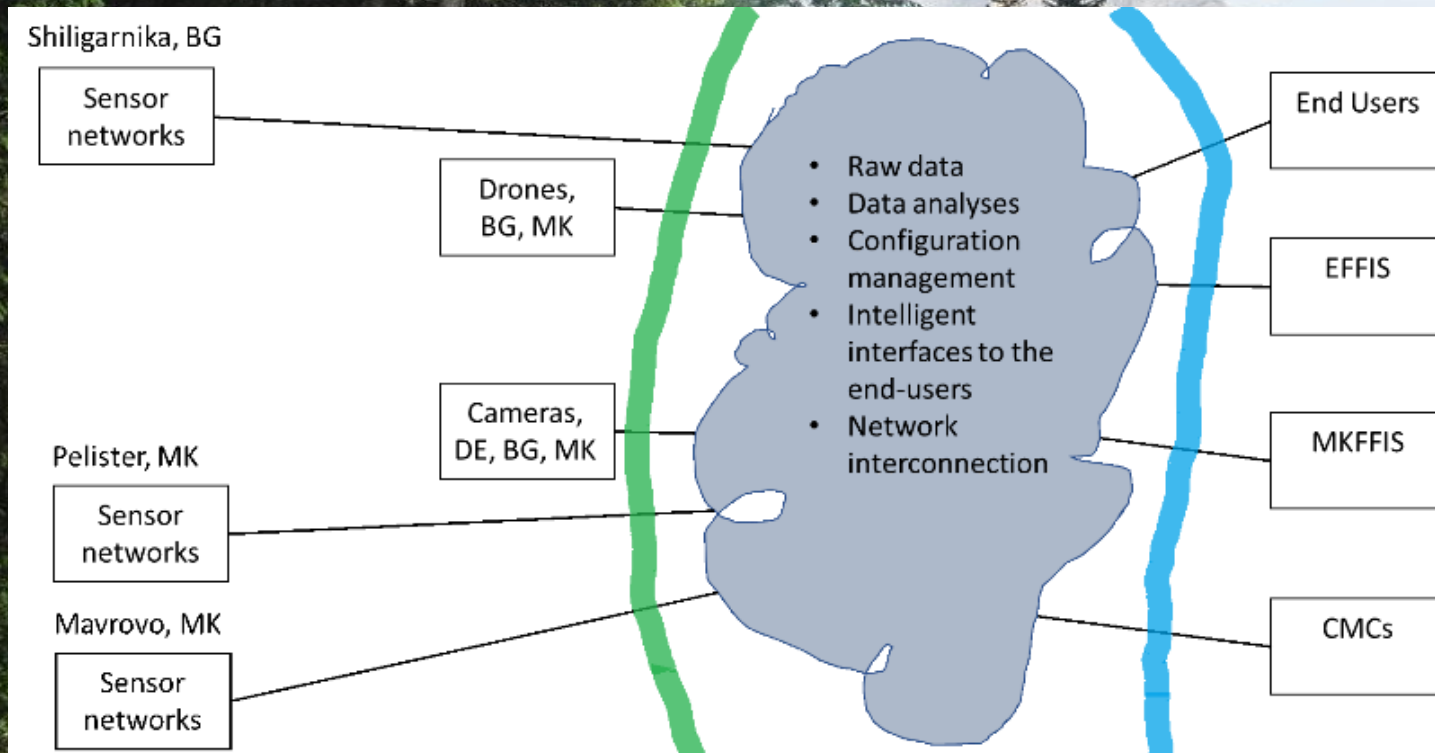
ASPires components and equipment



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ASpires software architecture

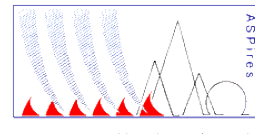
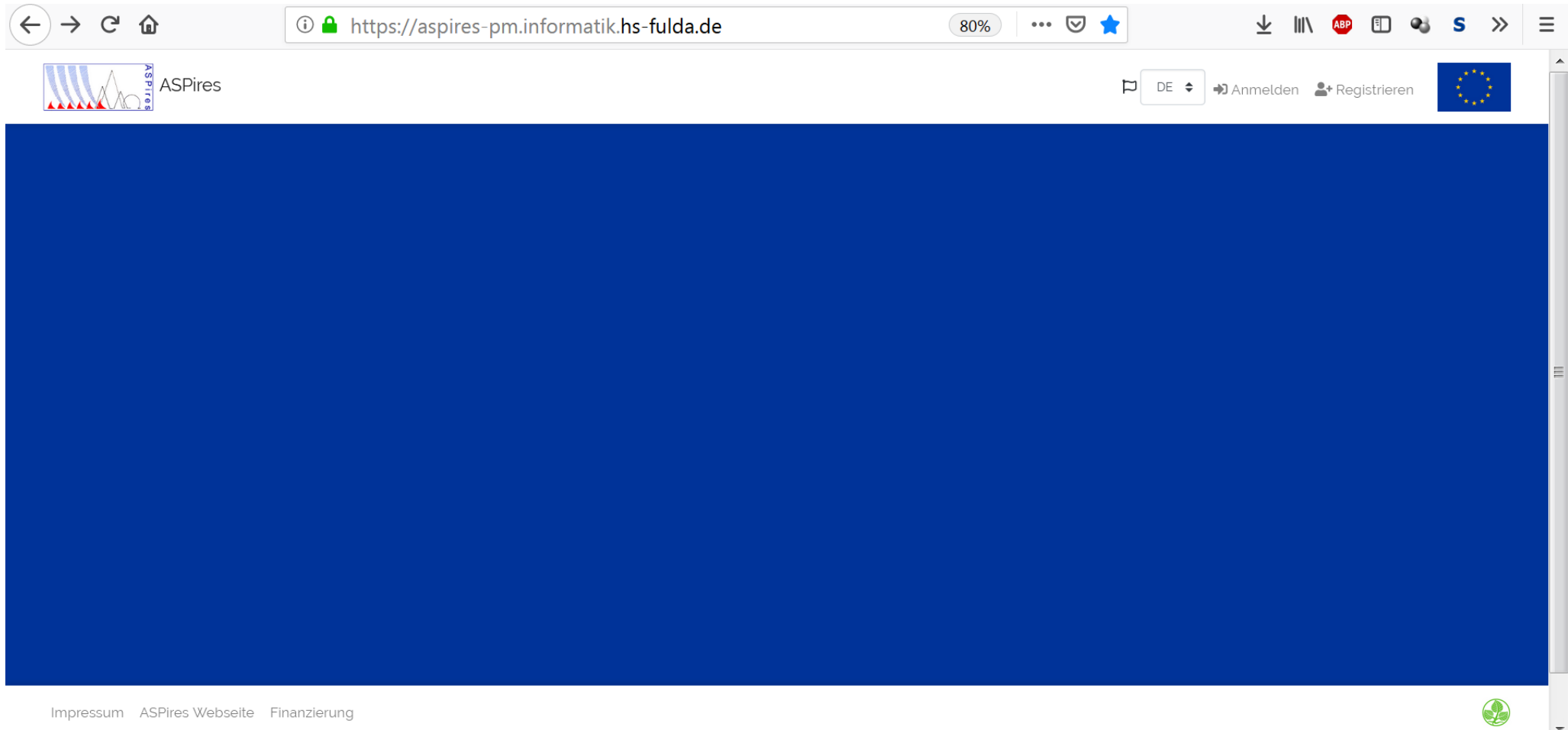


- South-bound cloud interface
 - Data ingestion
- Cloud
 - Data storage and archives
 - Data aggregation
 - Data mining
- North-bound cloud interface
 - API for end-user applications
 - ASpires Web services

UFulda Web application functionality

- Administration
- ASPires region page (map based information)
 - User management
 - Profile management
 - Security, reliability
- Sensor information
 - Including statistics
- Camera information
- Alarms

UFulda Web application home page



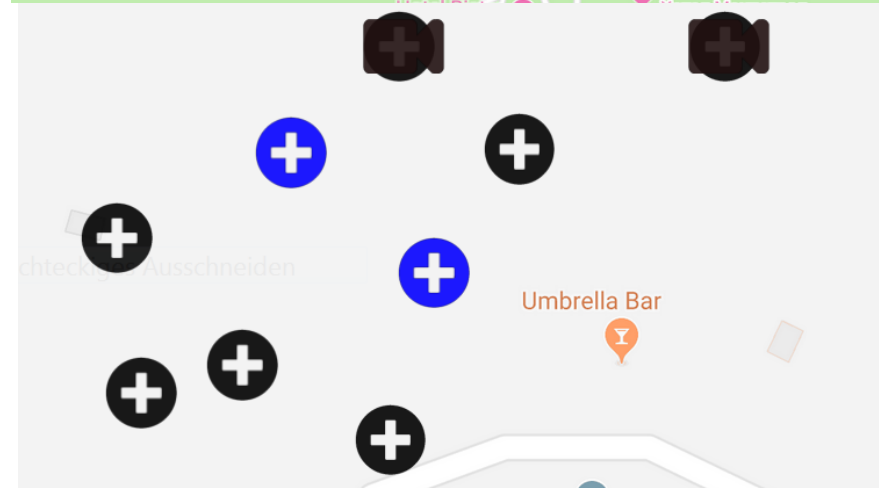
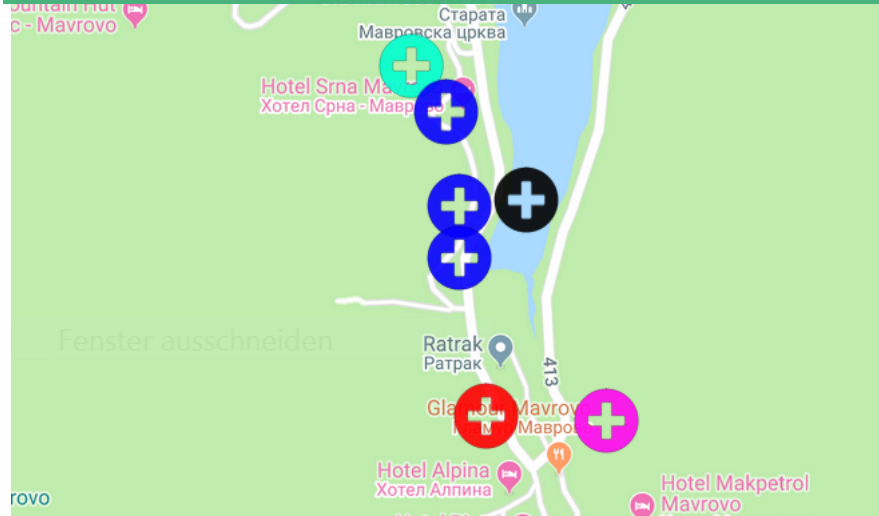
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Login screen(s)



Login

E-Mail Address

Password

Remember Me

[Forgot Your Password?](#)

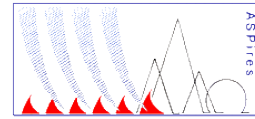
Login

E-Mail Address

Password

Remember Me

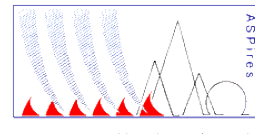
[Forgot Your Password?](#)



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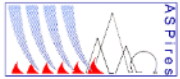
Language features

The image shows two screenshots of the ASPires web application interface. The top screenshot is in German, with the title 'Einstellungen' and a 'Speichern' button. The bottom screenshot is in Bulgarian, with the title 'Настройки' and 'Запазване' buttons. Both screenshots show a dropdown menu for selecting a region, with 'Aspires Bulgaria (1 m²)' selected in both. The interface includes a navigation bar with the ASPires logo, user profile options, and a language selector (DE/BG) and a European Union flag.



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Profile settings



Settings

Save

Choose a region

Choose a region to see available sensoric data and images

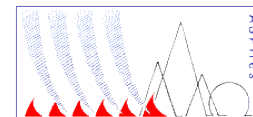
Aspires Bulgaria (1 m²)

user.choose-map-measurement

Choose a region to see available sensoric data and images

Temperature

Save



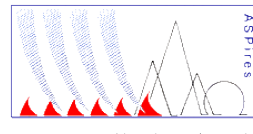
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ASPires BG region page (full screen)

ASPires

DE ASPires Visitor BG

Impressum ASPires Webseite Finanzierung

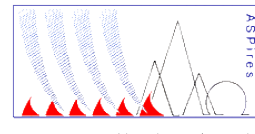
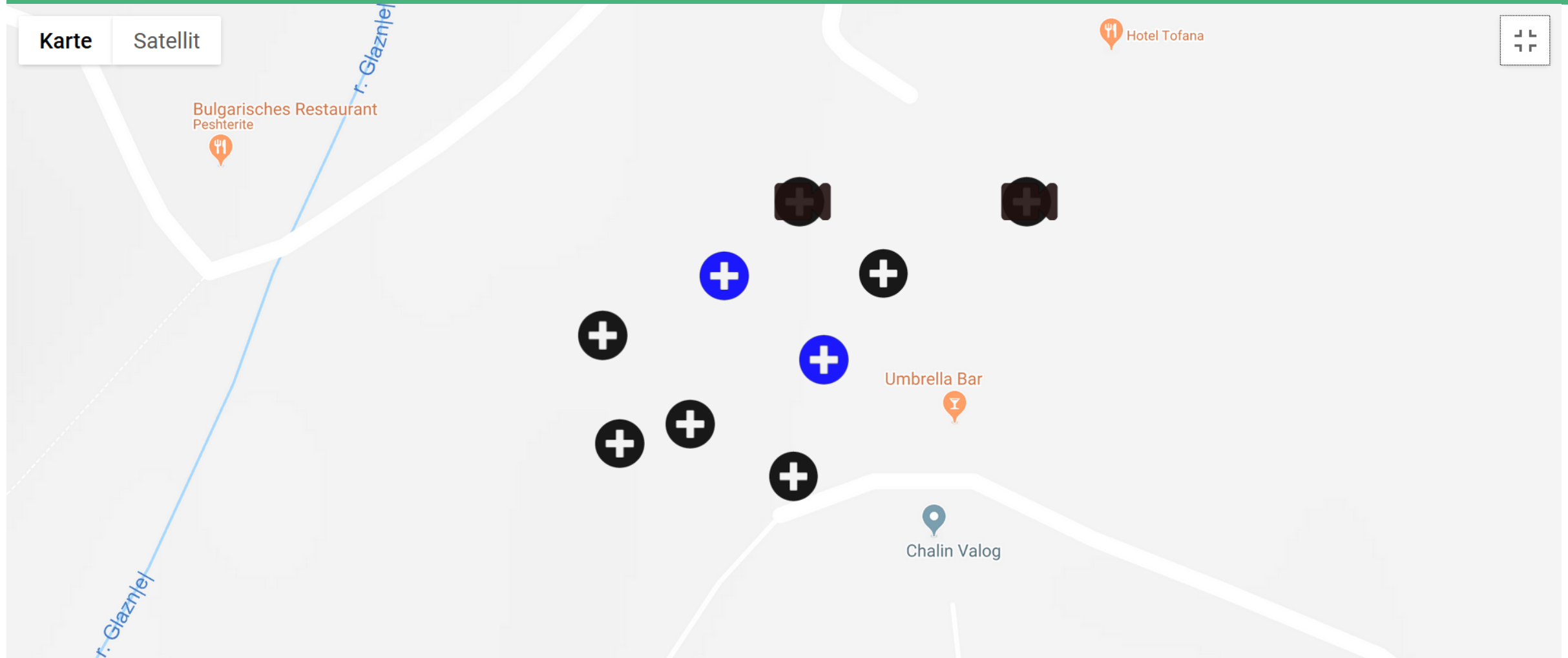


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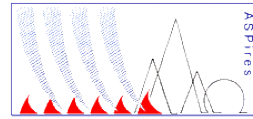
ASPires Bansko area map (full screen)



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ASPires MK region map (full screen)



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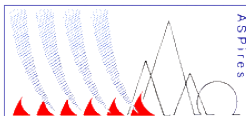
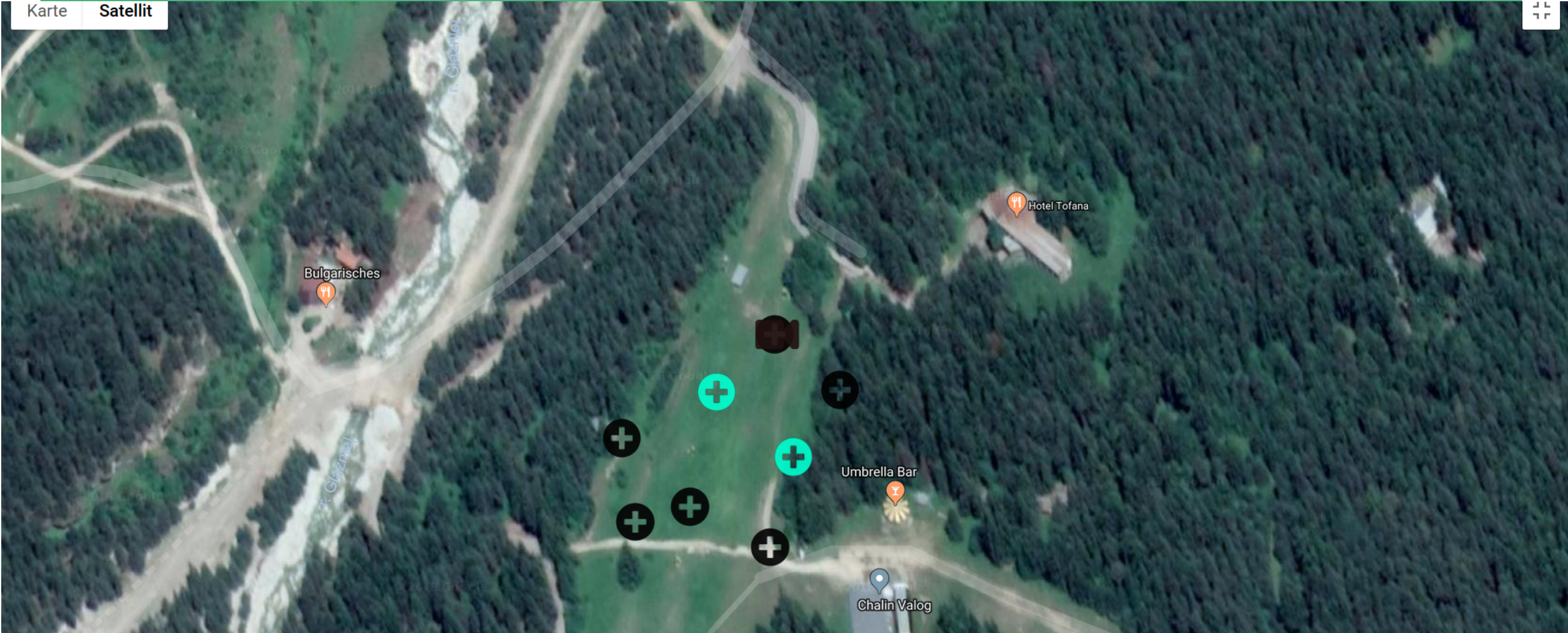
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ASPires Bansko map page (satellite view)

Karte Satellit

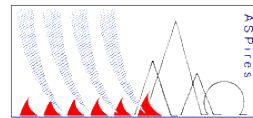
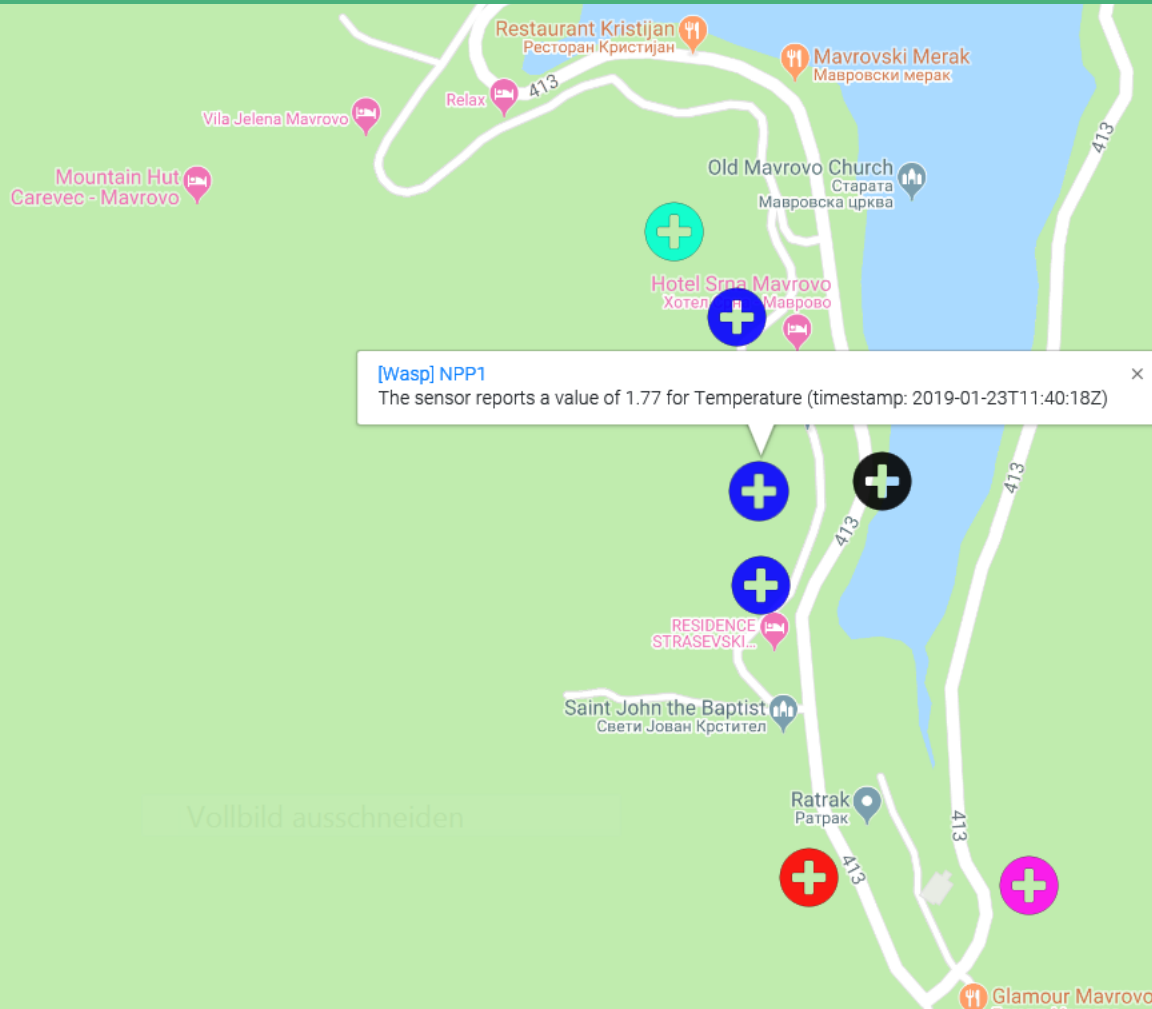


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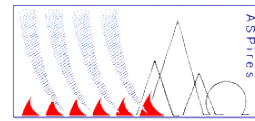
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Individual sensor readings



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Bansko fire drill area (real view)



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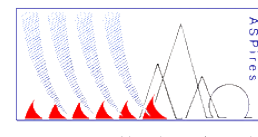
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Smoothed time-series sensor readings

Temperature



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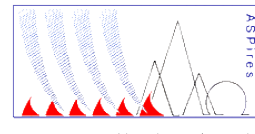
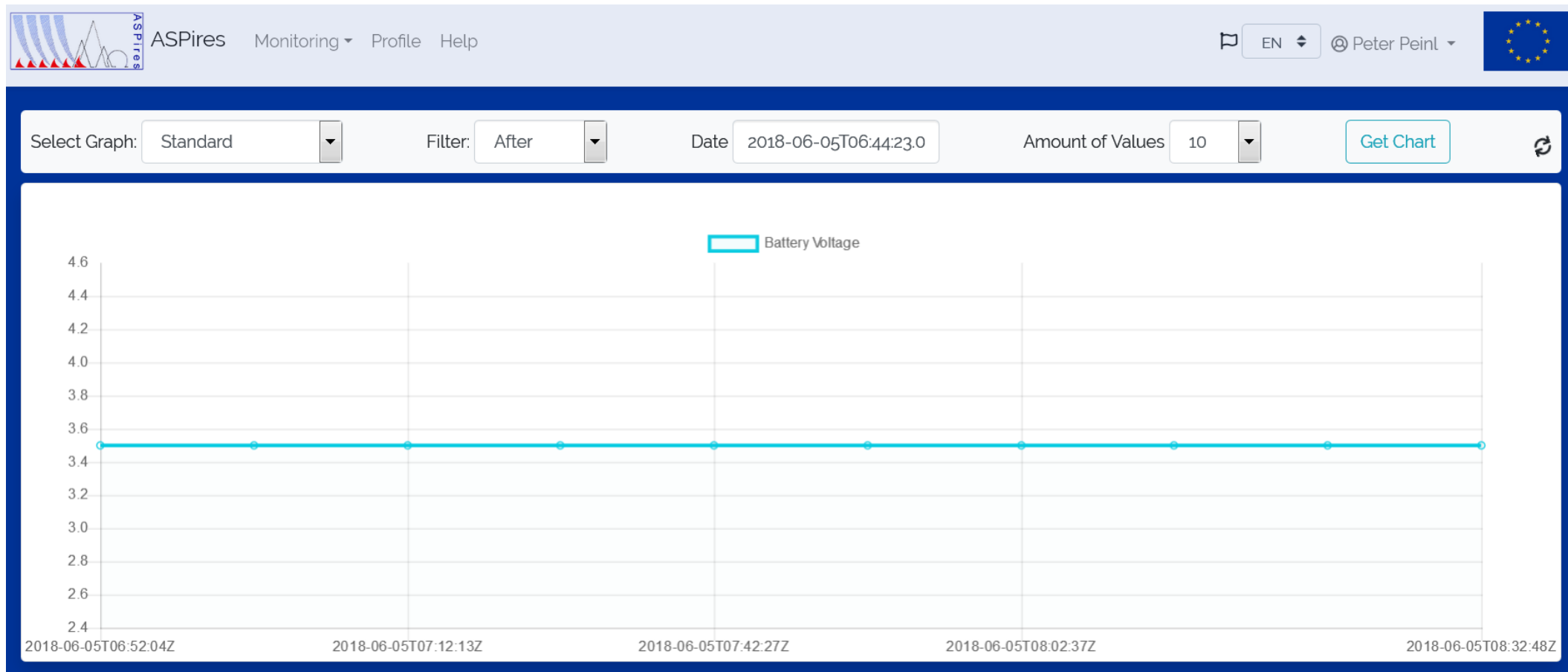
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Smoothed time-series sensor readings

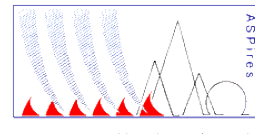
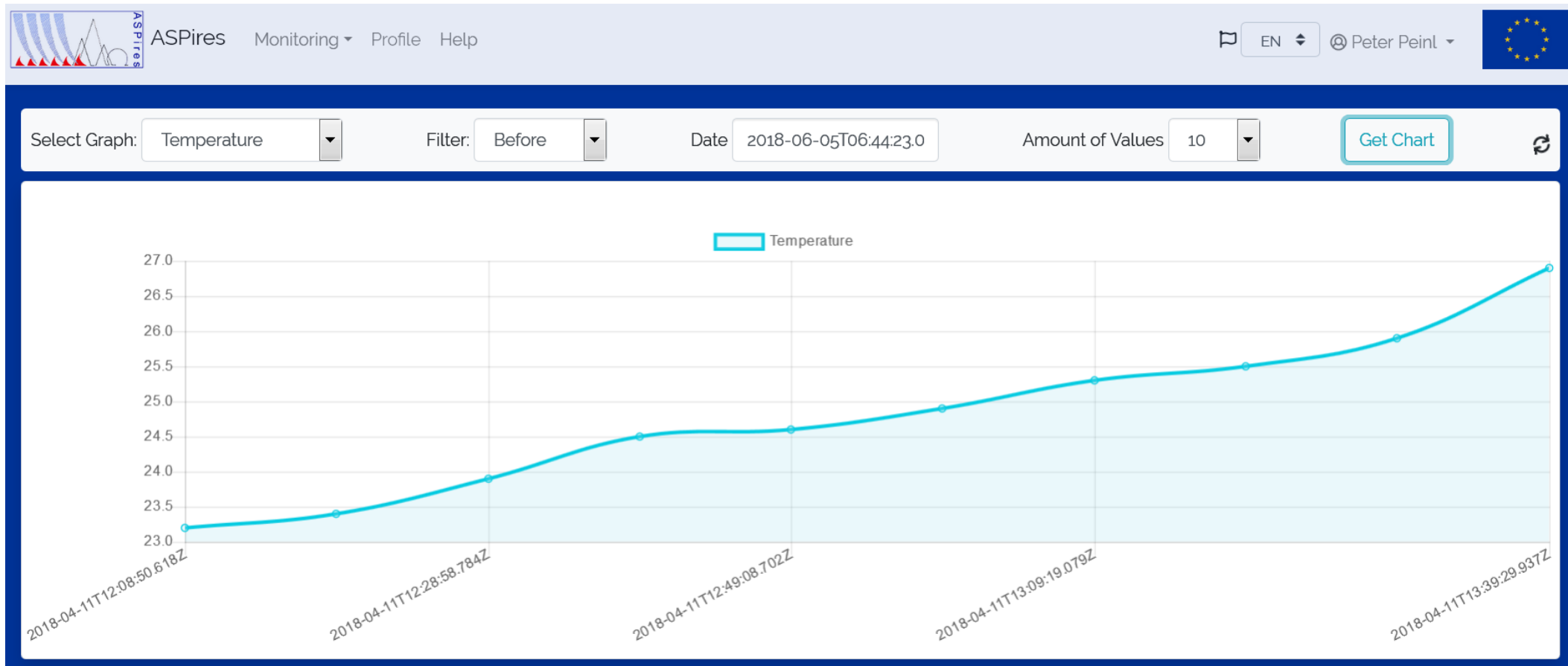
Battery voltage



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Smoothed time-series sensor readings

Historical data

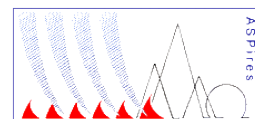


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Controlled fire preparation



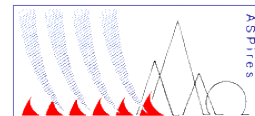
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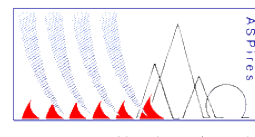
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Controlled fire



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Field gateway (data transmission into Cloud)

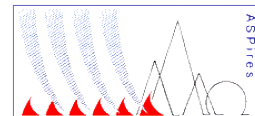


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Camera pictures (forest fire detected)



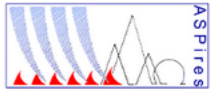
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Smoothed time-series sensor readings

Fine dust particles during fire drill

Fine dust particles



ASPIres User-Management ▾ Region ▾ Überwachen ▾ Profil Hilfe



DE ▾

@ Peter Peinl ▾



Diagramm wählen:

Standard ▾

Filter: Zwischen ▾

Datum von

2018-11-09T07:35:42.0C

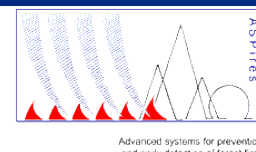
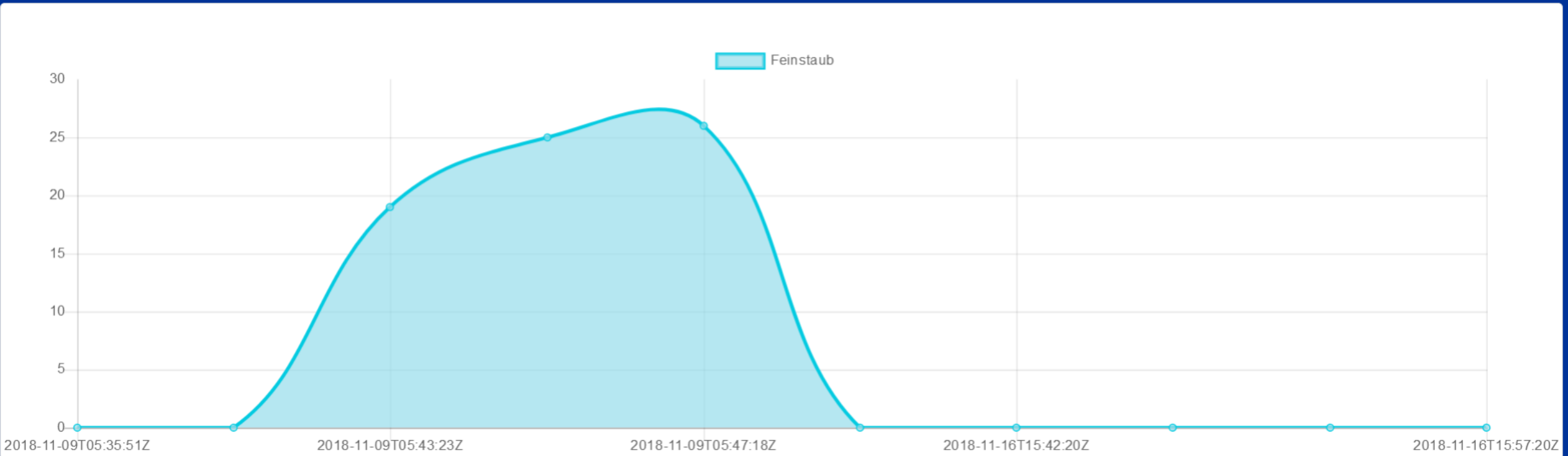
Datum bis

2018-11-09T10:55:42.0C

Anzahl Werte

10 ▾

Diagramm erstellen

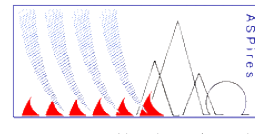
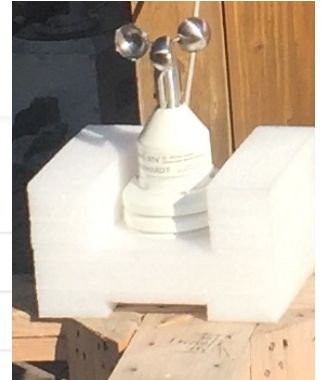
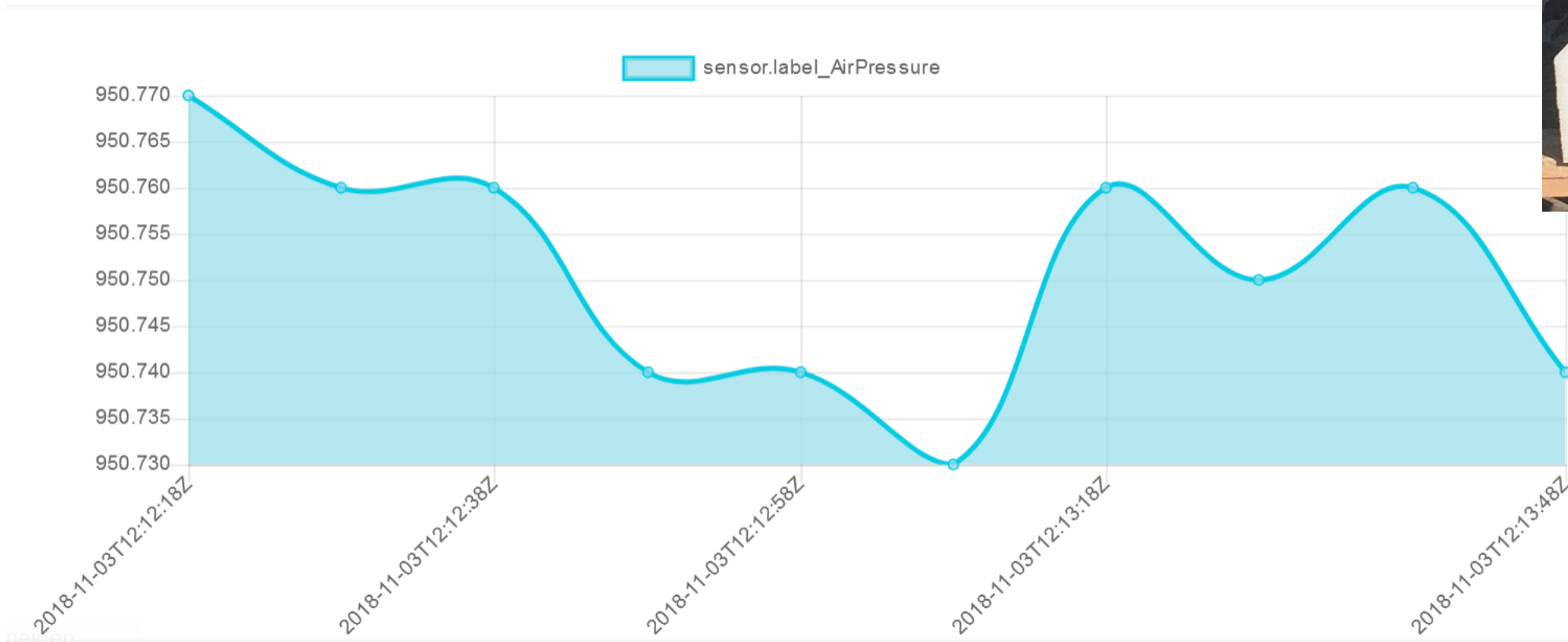


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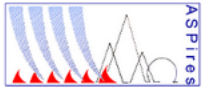
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Air pressure (weather station)



Main wind direction (weather station)



ASPires User-Management Region Überwachen Profil Hilfe



DE

Peter Peinl



Diagramm wählen:

sensor.label_MainWindDirection

Filter:

Letzte

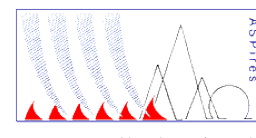
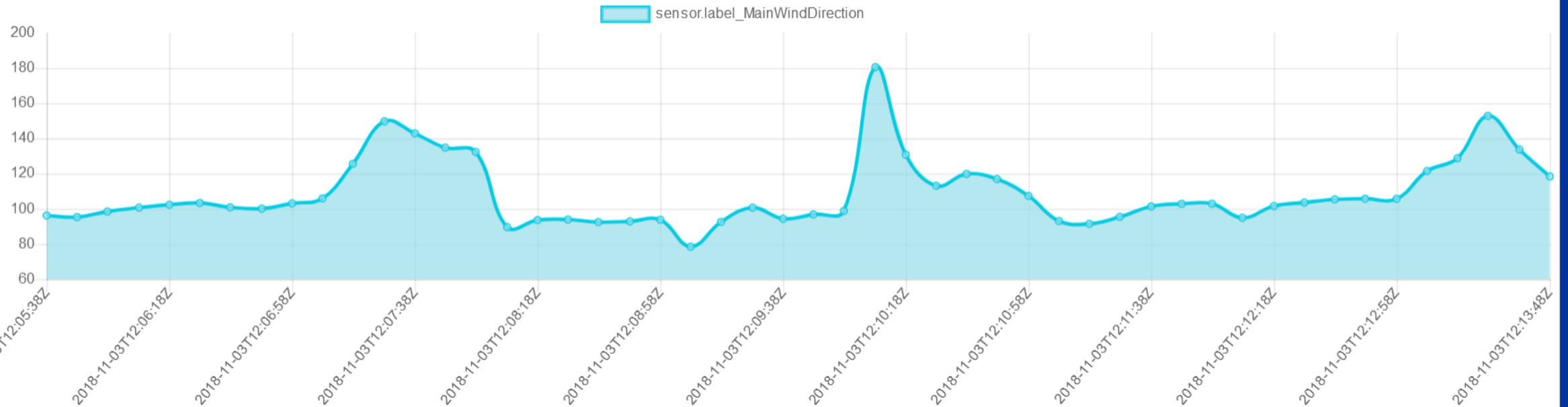
Datum

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Anzahl Werte

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Diagramm erstellen



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Conclusion

- Web application to enhance to capacity of CMCs for
 - the early detection and
 - prevention of forest fires
- End-users and use cases
- New services for existing CMIS, openness and easy integration
- End-to-end application
- Creation of European added value

Discussion

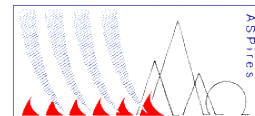
Thank you !

Merci !

Danke schön !

Questions ?

pe07pe@yahoo.de



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