



German Plant Phenotyping Network

Deutsches Pflanzen Phänotypisierungs-Netzwerk (DPPN)

www.dppn.de



HelmholtzZentrum münchen
Deutsches Forschungszentrum für Gesundheit und Umwelt



DPPN – the National Plant Phenotyping Platform of Germany



Mission

- Provide internationally leading **infrastructures and phenotyping sciences**
 - **Innovative concepts** (lab to field)
 - **Novel technologies**
 - **User-orientation** (Academia and industry)

Implementation

- network of 3 major research centers with **existing phenotyping expertise**
- **Startup phase** (5 years) funded by the Ministry of Science (34 Mio. €)
- **Follow-up phase** (at least 5 more years) funding by research institutions

DPPN – Design of consortium

Existing phenotyping competence

- Sensors, automation
- Plattform-Integration



- Lemnatec platforms

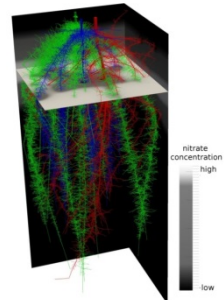
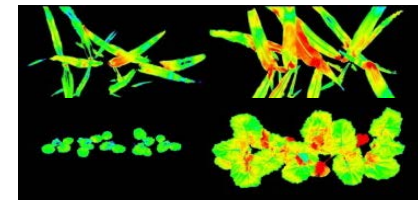


- Environment simulation

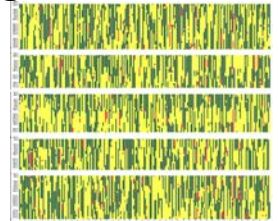


Complementary scientific expertise

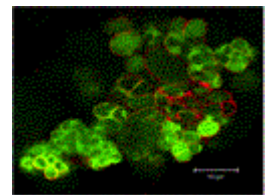
- Root/shoot; lab/ field
- Resource use efficiency, stress



- Gene/ seed bank
- omics-technologies

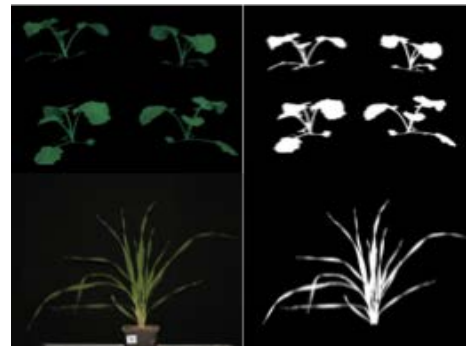
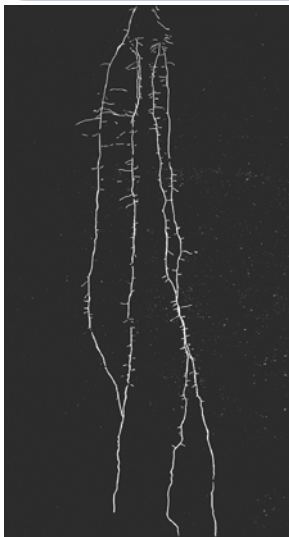
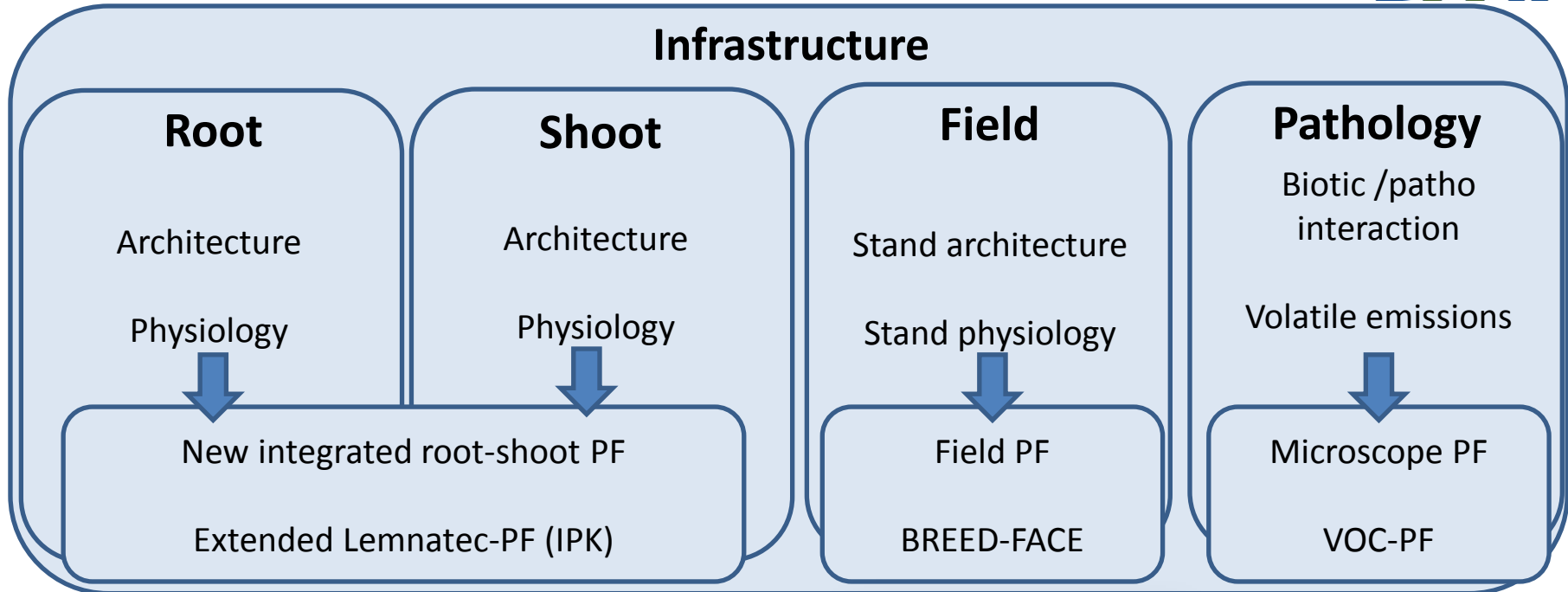


- Plant pathology
- Plant-microbe interactions



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DPPN – Platforms



DPPN – Portfolio of technologies

DPPN-Infrastruktur

Root

Architecture

Physiology

Shoot

Architecture

Physiology

Field

Stand-architecture

Stand-Physiology

Patho

Biotic /patho
interaction

Volatile emissions

Key parameters:

Photosynthesis

Water relations

Root / Shoot structure

Carbon relations

Pathology

Technologies:

High-throughput gas exchange; Chlorophyll-Fluorescence

Microwave, Giga-Hertz, Tera-Hertz, NIR, portable NMR, ...

Laser, structured light, MRI-4D, light curtain, light field,...

PET, MRI, respiration-measurements...

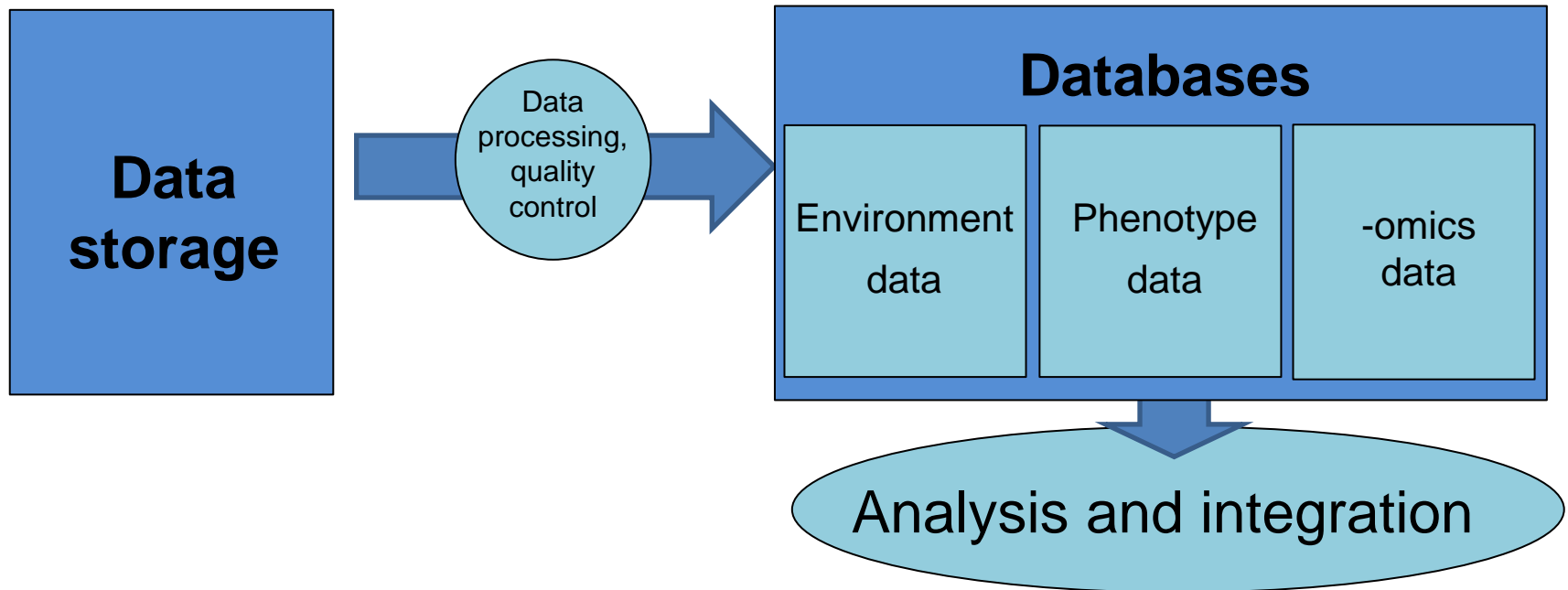
High-throughput confocal and microscope; VOC-platform



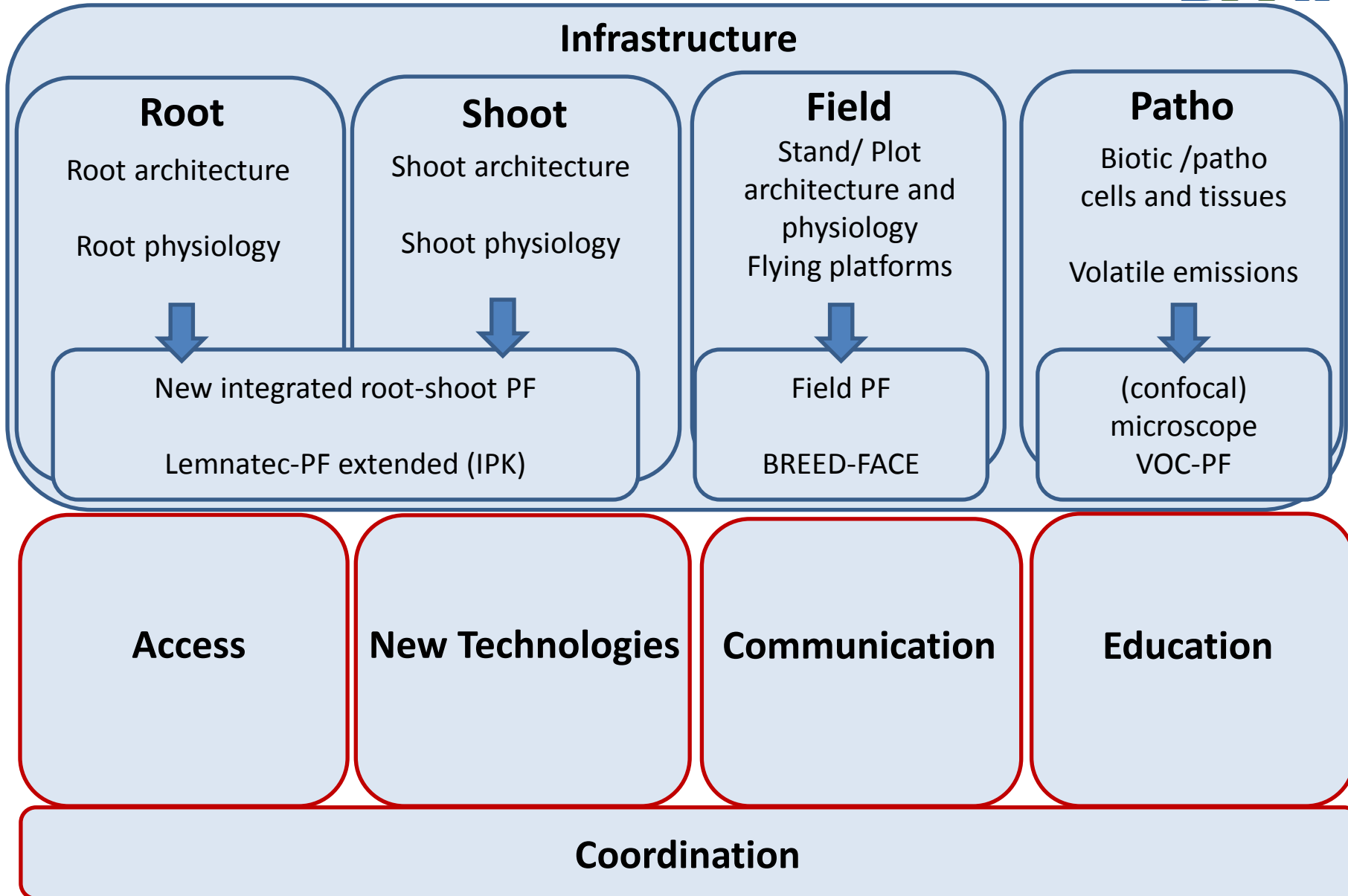
Integrate in platforms and give advice to users

DPPN – (Bio-)informatics Cross Topic

Integration of phenological,
-omics and environment data



DPPN – beyond infrastructure



Develop and implement phenotyping platforms Addressing major user groups

- High-Throughput Phenotyping
- Field Phenotyping
- Phenotyping portfolios
- BioInformatics

Access to academia and industry

Cooperate with European and global phenotyping communities





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