

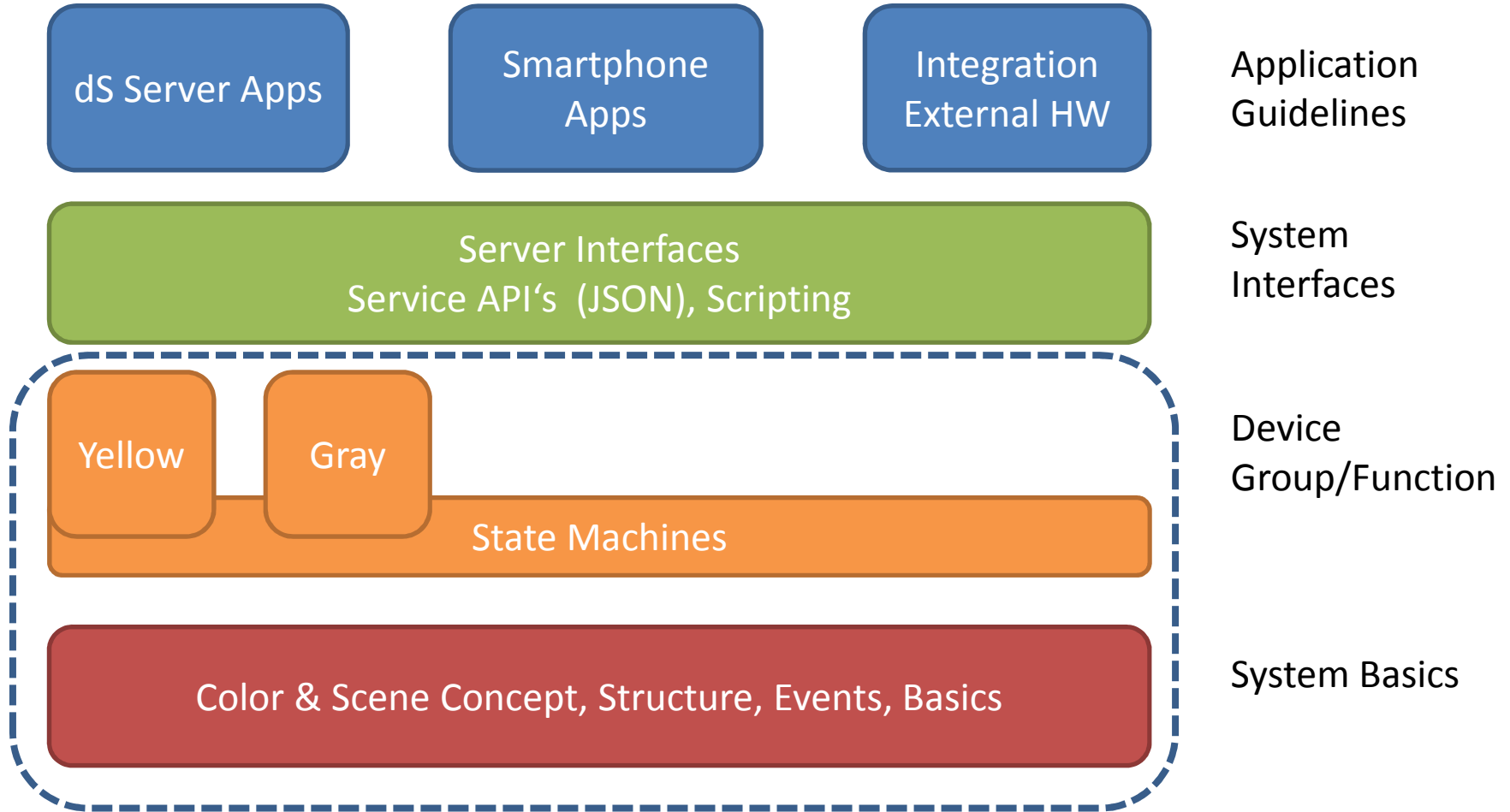


# Developer Day

## System Architecture

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# System Documentation



# Structure Objects

- Circuit
- Zone
- Group
- Device
- Server
- Apartment

# Event Objects

- Events on three different layers
  1. High Level Events
  2. System Level Events
  3. Low Level Events

# High Level Events

"Going to sleep"

"Away for holidays"

"Close the blinds on the south side"



"Breakfast"

"Back home"

"I want to read"

"The baby is asleep"

# System Level Events

- System Level Events:
  - direct translation of High-Level-Events
  - preset for a color group
  - sensor data
- dS Devices act on System-Level-Events

# Low Level Events

- User-Interface events on pushbuttons:  
Tip, Click  
2x Tip  
Hold down
- Automated input events:  
binary sensor state, On/Off
- Sensor data:  
measurements

# Groups

- Different devices in a house are kept apart through unique color groups:  
yellow for light  
gray for blinds and shades  
blue for climate  
...
- The color groups represent functional groups of devices with common behavior
- Plug&Play: all devices of one group automatically work together



# Joker

- «black» for Joker: Configurable devices without fixed group
- Criterion: choose the color according to the function of the connected device

# Operating Concept

- Group per zone has a state
- Main user interface in the room: wall switch
- 1x Tip                      Toggles Light On/Off  
  2x, 3x, 4x Tip            Light On  
  Hold (when On)        Dimming lights down
- State Machine controls system behavior

# Basic Presets

- Basic set of presets for a color group:  
Preset 0..4
- Preset 0      Lights off  
Preset 1      Lights on  
Preset 2      Lights on  
Preset 3      Lights on  
Preset 4      Lights on
- Lights on = at least one light device in the zone is on

# Basis of the concept

- Controlling the system from the High-Level-Event point of view
- Use the presets per group!
- Benefit:
  - interoperability
  - synchronicity
  - low latency

# Scenes

- dS Devices act on System-Level-Events = Scenes
- |          |            |          |
|----------|------------|----------|
| Preset 0 | Lights off | Scene 0  |
| Preset 1 | Lights on  | Scene 5  |
| Preset 2 | Lights on  | Scene 17 |
| Preset 3 | Lights on  | Scene 18 |
| Preset 4 | Lights on  | Scene 19 |
- Compare to API: `/json/zone/callScene`

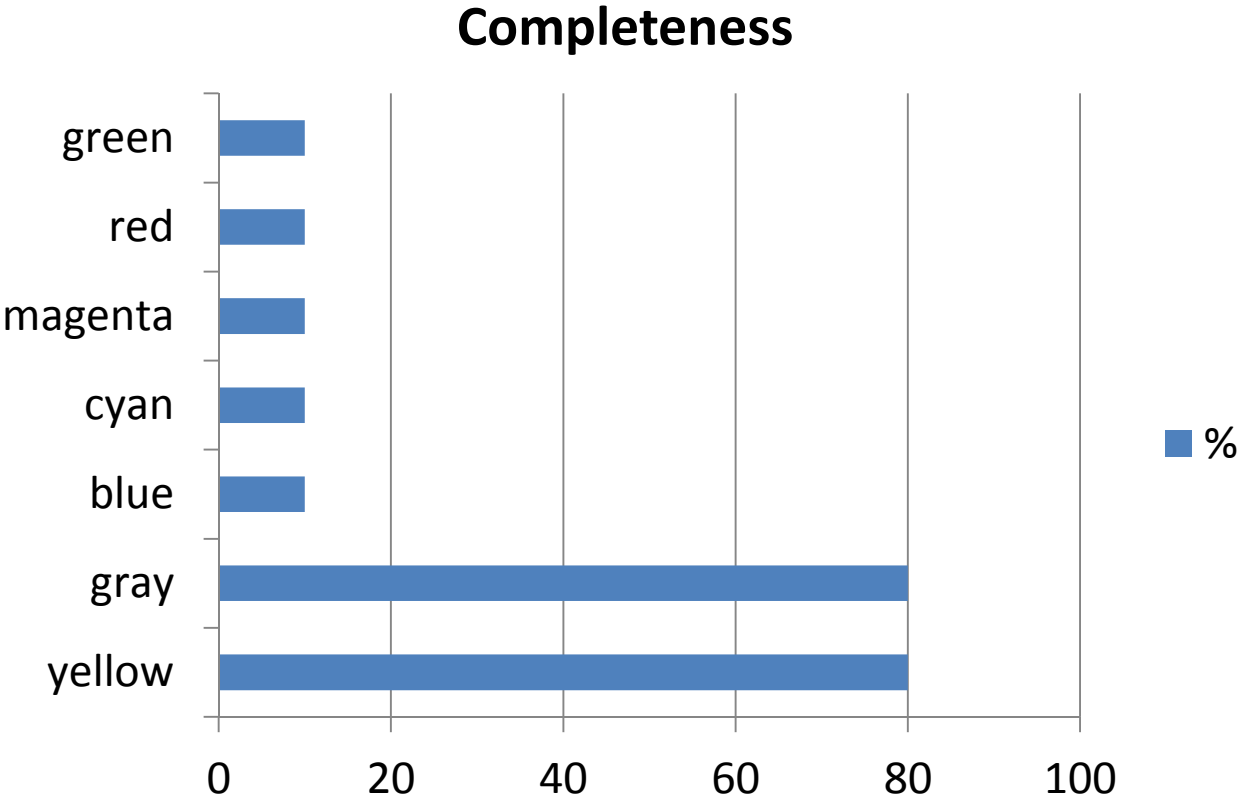
# Leave Home

- High-Level-Event «Leave Home» belongs to group «Access» and is therefore «green»
- No green presets per zone for leave home... just a signal
- Example of direct translation of a High-Level-Event to a scene
- Signal «Absent» interacts with any other functional group (Broadcast)

# «Apartment» Scenes

- Door Bell                      Scene 73
  - Alarm                         Scene 74
  - Absent                        Scene 72
  - Present                       Scene 71
  - Sleeping                      Scene 69
  - Wakeup                       Scene 70
  - Panic                         Scene 65
  - ...
- 
- Signals – States

# Definition of group behavior





# Pending group changes

- Security and Access do not have a zone state  
-> Removal of standard groups
- Climate will be split into 4 categories  
-> Heating, Cooling, Ventilation, Window
- Additional «Regelungsgruppe» for room temperature
- Apartmentwide functional groups
- User defineable groups
  
- Definition of standard behavior

# Plug 'n' Play

- Basis:
  1. Color groups
  2. Standardized device behavior
  3. Circuits and its corresponding first zone

# dS - Light

- Document with detailed description of light device behavior for all System-Level-Events
- Configuration: Scene Table
- Options:
  - Output Value(s)
  - Don't Care
  - Ignore Local Priorization
  - Flash

# Certification Rules

- Definitions written down in dS-Basics and dS-Light document
- Basis for Light device to be «dS-Ready»

# Sensor Inputs - Pushbuttons

- Wall switches and device On/Off switches
- 1-way and 2-way
- Operating Mode for dS Devices configurable:  
Modes: Device, Zone, Area, App
- Generate Low-Level-Events if activated:  
TIP\_1X  
HOLD\_START  
TIP\_3X\_DOWN  
LOCAL\_OFF

# Sensor Inputs – Binary State

- Automated input from binary-state sensors
- Applications:
  - Motion Detectors
  - Wind Sensors
  - Rain Sensors
- Low-Level-Events:
  - ON
  - OFF

# Questions – Frequently Asked

- Can I query the actual output of a device?  
Yes
- Can I query the current power consumption of a device?  
Yes
- Are sensors supported?  
Yes, and additionally: Sensors with switch output  
dS Devices with sensors (other than power consumption) not yet available

# Documents

- Download from:  
<http://developer.digitalstrom.org/Architecture>
- dS-Basics, dS-Light, State-Machines, System-Interfaces
- Certification Rules: Basic guidelines as basis for standardization
- Rules valid for dS Device vendors  
AND  
Applications interacting with dS



**More Questions ?**