

The logo for Computer Measurement Group (CMG) is displayed in a large, bold, white sans-serif font. The letters are slightly shadowed, giving them a three-dimensional appearance as if they are floating above a surface. The background is a blurred field of blue and teal spheres, with one sphere in sharp focus in the center, directly below the logo.

CMG

SDN & VN AG KICK OFF 2023

24 / 1 / 2023

by Johannes Zeitelberger

Computer Measurement Group – Austria & Eastern Europe

CMG – PURPOSE & GOALS

- CMG-AE (The Computer Measurement Group – Austria & Eastern Europe) is an open, vendor independent forum for stakeholders in the communications and information technology sector.
- The universal guideline of all CMG-AE activities is how to implement innovation in a meaningful, economical and sustainable way for the benefit of society.
- CMG-AE is part of an international Non-Profit-Organization CMG, headquartered in USA.

RÜCKBLICK & STATUS QUO

- Zielsetzungen der CMG von 2011 sind erreicht oder greifbar:
 - Österreichweite Glasfaser-Infrastruktur entsteht
 - Breitband-Gesellschaften in allen Bundesländern aktiv
 - Konzept der Offenen Zugangsnetze (OAN) vielerorts angenommen (WohleSale)
 - Förderprogramme & § (Zahlreiche Stellungnahmen von CMG an Bund & EU)
- Gründung einer unabhängigen Interessensvertretung: OFAA
- Neue Herausforderungen:
 - Glasfaser-Infrastruktur produktiv machen
 - Monetarisierung und Refinanzierung der Investitionen
 - Technischen Anforderungen von Kunden erfolgreich begegnen

CMG 2023

- CMG Neu-Ausrichtung:
 - Mehr Business Orientierung vs bisheriger funktionaler Strukturierung
- Künftiger Fokus:
 - Business Creation (zB Virtualisierung, De-Regulierung)
 - Resilience & Business Continuity (zB Security, Anti-Fraud)
 - Produktivität & Effizienz (zB Lean IT)

Thematische Aktionsgruppen (AGs) bleiben bestehen

CMG AG „VN & SDN“

- Virtualisierung:
 - Optimale Bewirtschaftung von Netzwerken (Clouds, Metro-Nets ...)
 - Besseres und flexibleres Management
 - Nutzung offener Standards
 - Vermeidung der Abhängigkeit von proprietärem Gerät

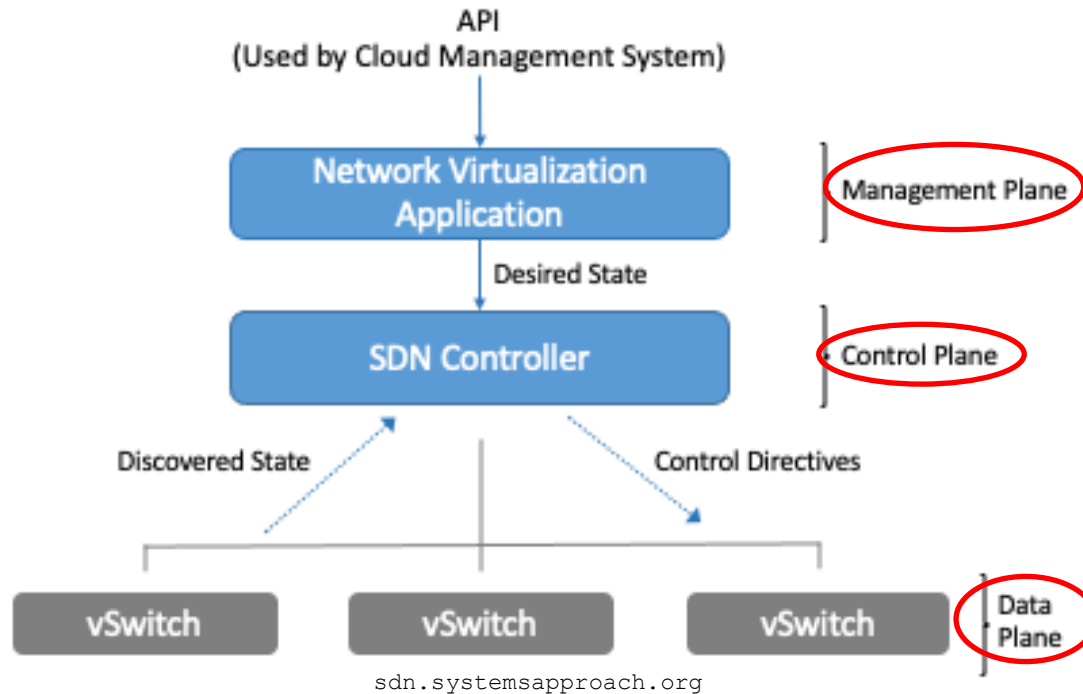
- Herausforderungen:
 - Provisioning & Management
 - Performance & Produktivität
 - Security
 - Monitoring ...

GRUNDLAGEN

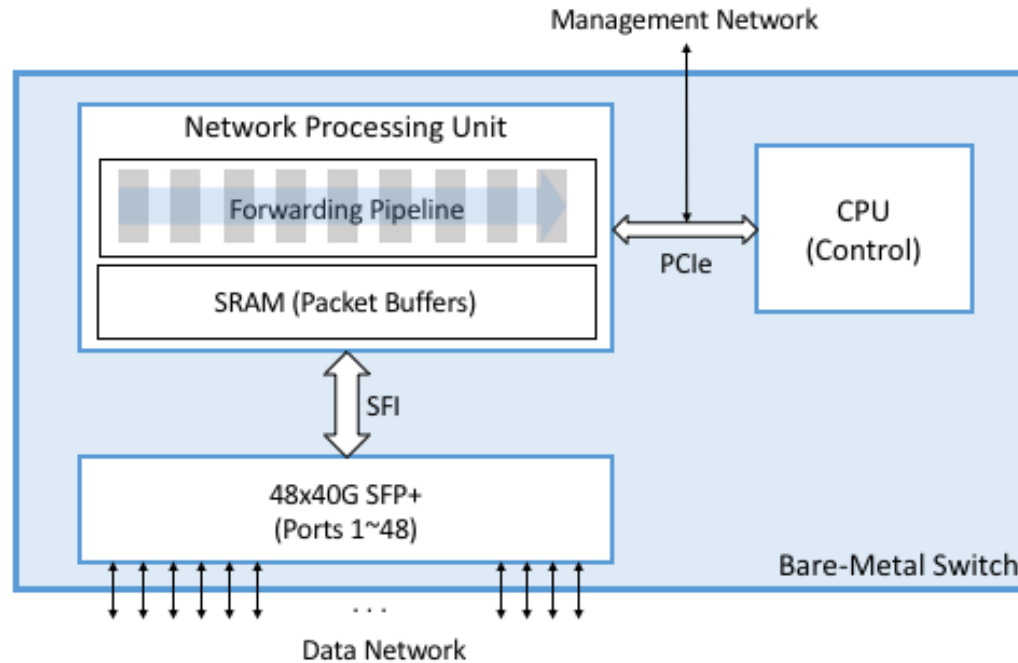
- Konzepte:
 - NV (Network Virtualization)
 - VPN & VLAN (Adressraum-Virtualisierung)
 - NFV (Network Functions Virtualization)
 - SDN (Software-defined Network)
 - SD-WAN (Software-defined Wide Area Network)
 - SDN-Twin (Digitale Zwillinge)

- SDN:
 - Trennung von Steuerung und Datenfluss in einem Netzwerk
 - Zentrale Steuerung von vielen Komponenten
 - Verschiebung der Kontrolle vom Hersteller zum Betreiber
 - Stärkung der Rolle des Anwenders

SDN ARCHITEKTUR

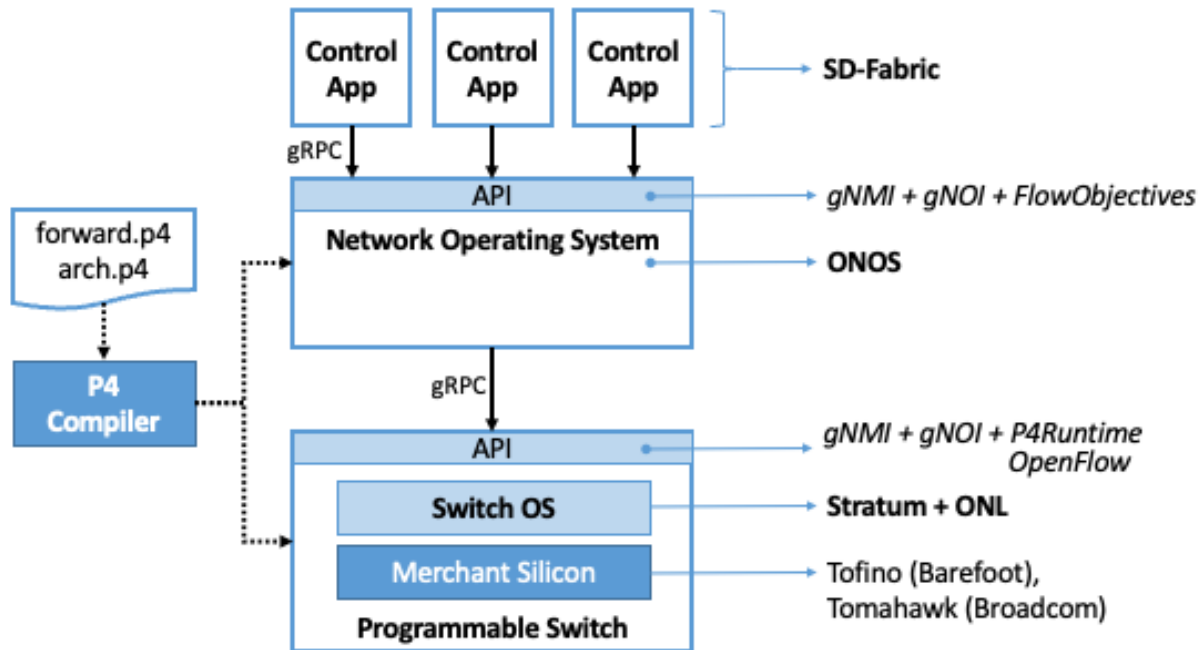


BARE METAL SWITCHES



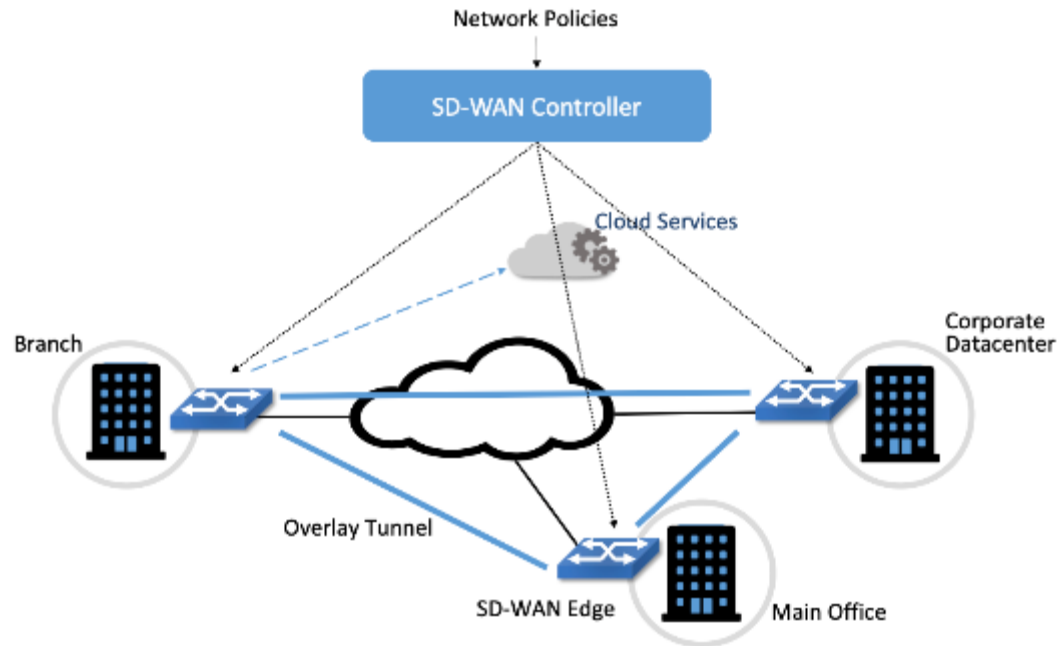
sdn.systemsapproach.org

SDN SOFTWARE STACK



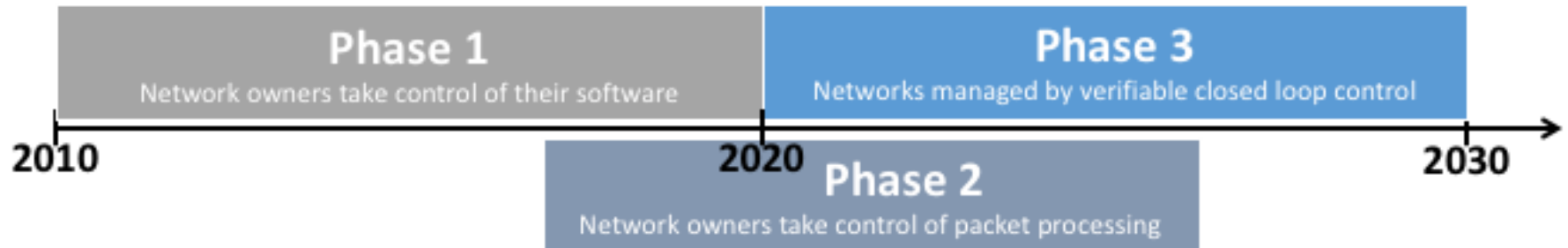
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SD-WAN



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SDN OUTLOOK



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SDN-TWIN

- Software-defined-networking with digital twins:
 - Optimization based on mathematics, operations research, science and nature
 - Applications and services in all real-world fields
 - Virtualizing:
 - Adressing, Signaling, Routing, Congestion Control & Emergency Operation
 - Open components only: Standard PCs, Bare Metal Switches

- Dipl.-Ing. Dr. Harmen van As:
 - emer. o.Prof.
 - Technische Universität Wien



DIGITAL TWINS

- Digital Twin Basics:
 - A real-time virtual representation of a real-world physical system/process
 - Triple concept: Physical product – Digital/virtual product – connections in-between
 - For: Simulation, integration, testing, monitoring & maintenance
 - First publicly introduced in 2002 by Michael Grieves (*University of Michigan*)
 - Literarily anticipated by David Gelernter's 1991 book “Mirror Worlds”
 - 70s Origins: Apollo 13 incident → simulators evaluate failures by “data to model”
- Increasing Importance:
 - Model-based systems engineering → “the idea of a living model”
 - Alternative to testing very large structures or non-deterministic autonomous systems

SDN-TWIN.AT

- Setting up a Center of Excellence:
„SDN-TWIN – European Open Network Technologies Society“



CONTACT

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A dark blue circular logo with a gradient, containing the text "Computer Measurement Group" in white, bold, sans-serif font.

**Computer
Measurement
Group**