GIESSWEIN
Software-Solutions

.NET 5 und C# @2020

Ing. Christian Giesswein, MSc.

www.software.tirol

@giessweinweb

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About Me

- Ing. Christian Giesswein, MSc.
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- .NET Allrounder
  - C# & .NET, .NET Core
  - Datenbankentwicklung - EF / EF Core
  - Anwendungsentwicklung – WPF & Blazor

- Konferenzsprecher / Fachautor im DACH Raum

- Gründer „Giesswein Software-Solutions" in Tirol / Österreich (2013)
  - .NET (Core) Beratung, Schulung und Entwicklung
  - Produktentwicklung
    - MDebug (Debug Mono - www.mdebug.com)
    - FastWPF (WPF Designer - www.fastwpf.dev)

Erwartungen von meiner Seite

- Organisatorisch
  - 09:00 – 17:00
  - Pausen & Mittagspause

- **Achtung**: Interaktiv und Live ☺
  - Fragen, Fragen, Fragen, …!
    - Jederzeit und überall
  - Alle Unterlagen auf https://github.com/softwaretirol

- Kritik, Anregungen, Feedback ist erwünscht!

Einstiegsfragen

- Arbeiten Sie aktuell mit .NET Framework oder .NET Core?

- Auf welchen „Stand" sind Sie? C# 1.0, 2.0,… 10.0?
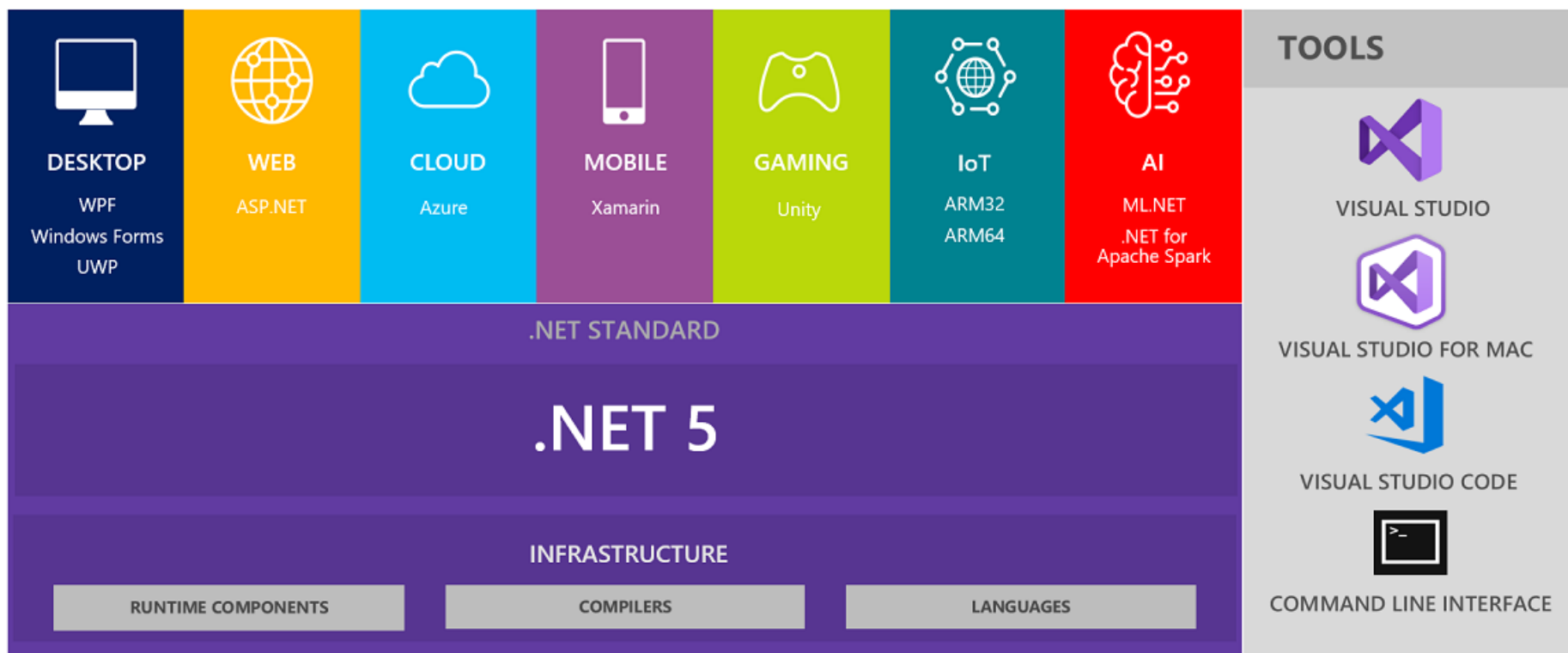
- Erwartungshaltung von diesem Workshop?

.NET 5

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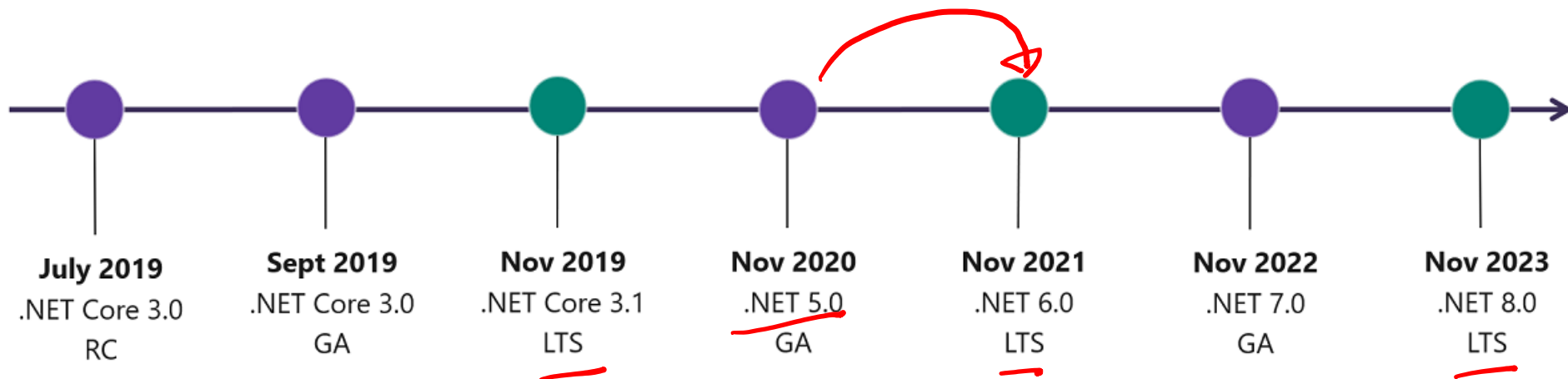
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.NET – (Wieder) eine Plattform!

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.NET Schedule

July 2019	Sept 2019	Nov 2019	Nov 2020	Nov 2021	Nov 2022	Nov 2023
.NET Core 3.0 RC	.NET Core 3.0 GA	.NET Core 3.1 LTS	.NET 5.0 GA	.NET 6.0 LTS	.NET 7.0 GA	.NET 8.0 LTS

- .NET Core 3.0 release in September
- .NET Core 3.1 = Long Term Support (LTS)
- .NET 5.0 release in November 2020
- Major releases every year, LTS for even numbered releases
- Predictable schedule, minor releases if needed

.NET 5

- Release war am 10.11.2020 – **Vor 2 Wochen**!

- Mindestens Visual Studio 16.8

- https://dotnet.microsoft.com/download/dotnet/5.0

.NET 5.0 Highlights

There are many important improvements in .NET 5.0:

- **.NET 5.0 is already battle-tested** by being hosted for months at dot.net and Bing.com (version).
- **Performance is greatly improved** across many components and is described in detail at Performance Improvements in .NET 5.0, Arm64 Performance in .NET 5.0, and gRPC.
- **C# 9 and F# 5 offer new language improvements** such as top-level programs and records for C# 9, while F# 5 offers interactive programming and a performance boost for functional programming on .NET.
- **.NET libraries have enhanced performance** for Json serialization, regular expressions, and HTTP (HTTP 1.1, HTTP/2). They are also are now completely annotated for nullability.
- **P95 latency has dropped** due to refinements in the GC, tiered compilation, and other areas.
- **Application deployment options are better**, with ClickOnce client app publishing, single-file apps, reduced container image size, and the addition of Server Core container images.
- **Platform scope expanded** with Windows Arm64 and WebAssembly.

Action!

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C#

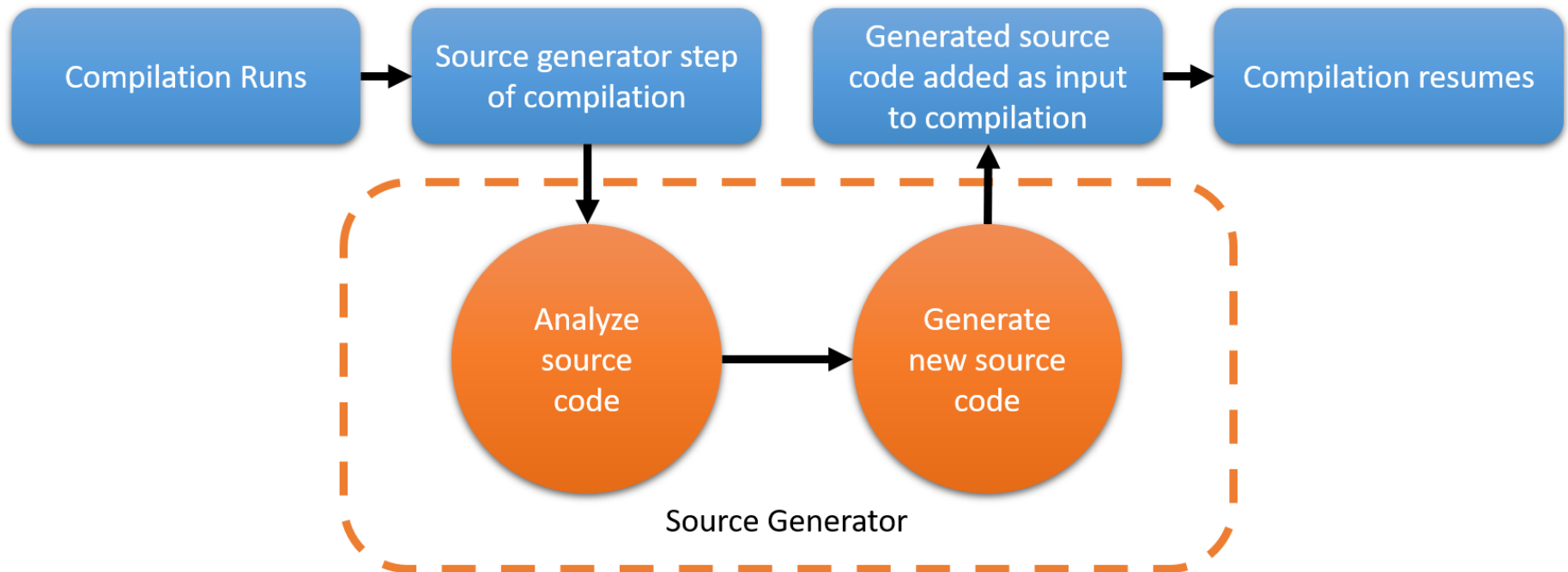Ing. Christian Giesswein, MSc.
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C# 9.0

- **Records**
- **Init only setters**
- **Top-level statements**
- **Pattern matching enhancements**
- Native sized integers
- Function pointers
- Suppress emitting localsinit flag
- **Target-typed new expressions**
- static anonymous functions
- Target-typed conditional expressions
- Covariant return types
- Extension GetEnumerator support for foreach loops
- Lambda discard parameters
- Attributes on local functions
- Module initializers
- New features for partial methods

Source Code Generators

- C# 9.0 – Offizieller Support für „Source Code Generators"

- Grundlage für .NET 6 und .NET 7 Funktionen

| Compilation Runs | → | Source generator step of compilation | | Generated source code added as input to compilation | → | Compilation resumes |

Analyze source code → Generate new source code

Source Generator

Schulungs-, Beratungs- und/oder Projektunterstützung ?!

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Unterlagen / Beispiele
https://github.com/softwaretirol/conferences

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