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**Async mit C# 5**

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# Agenda

- Async Patterns
- `async` & `await`
- Error Handling
- Cancellation

# Goals

- Vorteile der Task-based Async Programmierung
- Grundlagen und wichtigste Konzepte
- Viele Code Samples

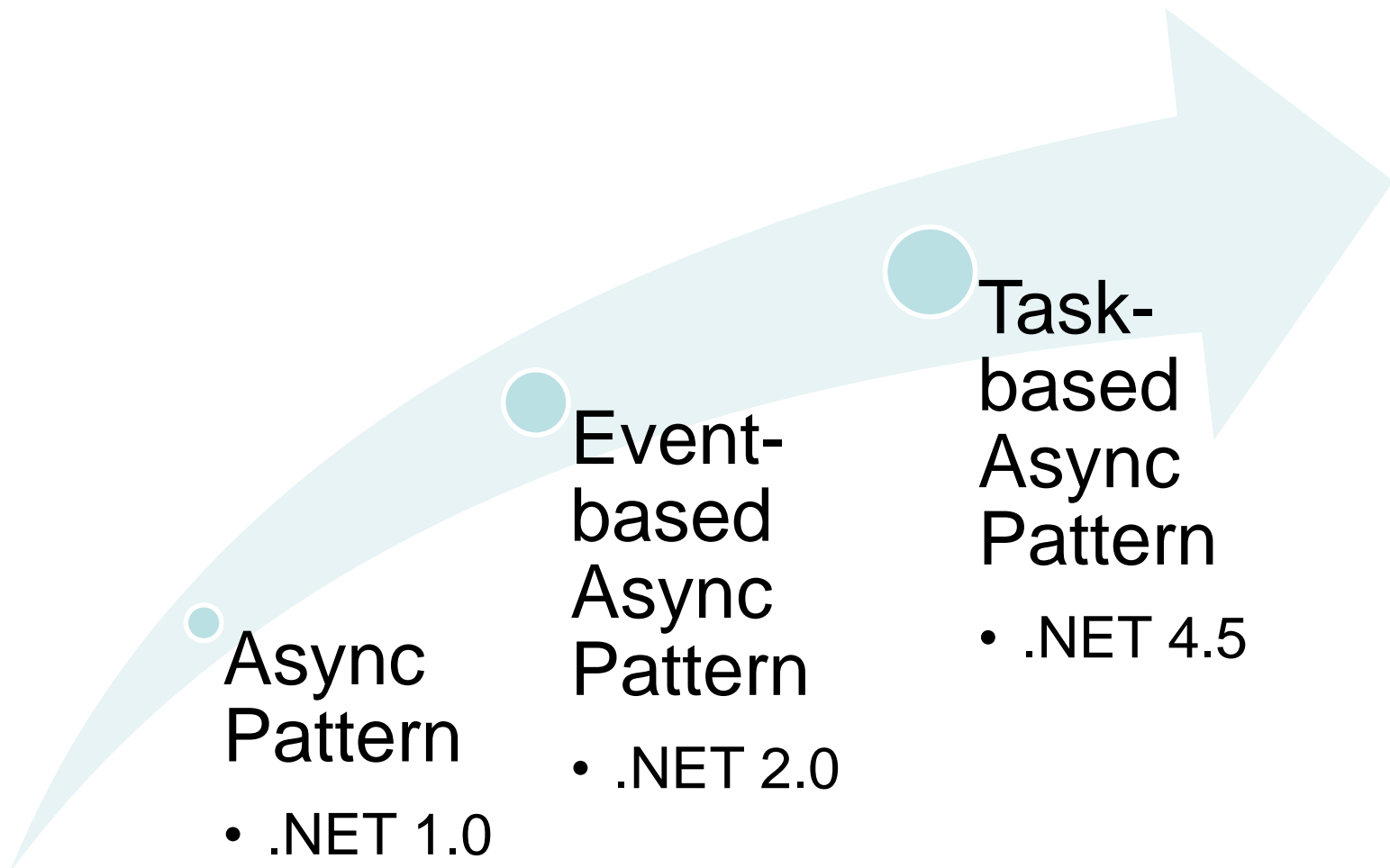




# C# History



# Async Patterns



# What we've seen

- Async Pattern
  - Begin / End Methoden
  - **Komplex** zu verwenden
- Async Event Pattern
  - Callback Handler im Thread mit Synchronization-Context
  - Einfacher aber falsche **Reihenfolge**
- async / await Keywords
  - Programmierstil **wie synchrone** Programmierung







A photograph of a Ferrari pit crew in a garage. Several crew members in red and white uniforms with Ferrari and Shell logos are working on a red Ferrari Formula 1 car. The car is on a pit lane, and the background shows a wall with a "Santander" logo. The text "Behind the Scenes" is overlaid in the center.

# Behind the Scenes

# What we've seen

Async / Await

- basiert auf **Continuation Tasks**
- Neue Keywords sind **einfacher**







# Error Handling



# What we've seen

- void Methoden vermeiden
- Fehler beim wartenden Aufrufer
- Bei Composition:
  - Exception Information vom 1. Task
  - Resulting Task beinhaltet  
AggregateException







A man wearing a white polo shirt with "FF CANADA" and "PIT LANE" logos, a headset, and a lanyard is holding a red flag. He is standing on a boat deck with white railings. In the background, there are white chairs and a person in a blue shirt. A large blue banner with the "RBS" logo is visible in the foreground.

# Cancellation

# What we've seen

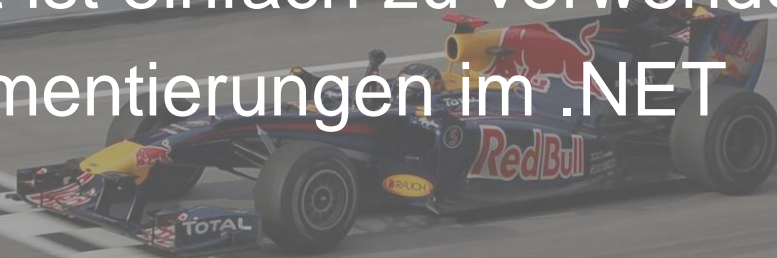
- Standard Cancellation Mechanismus seit .NET 4
- CancellationTokenSource
- Übergabe vom Cancellation Token an die asynchrone Methode
- OperationCanceledException





# Summary

- UI Thread nicht blockieren
- async / await ist einfach zu verwenden
- Async Implementierungen im .NET Framework



# Call to Action

- Start using Visual Studio 2012, C# 5 und .NET 4.5
- Async mit allen Applikations-Typen
- Async und Windows Store apps
- 101 Async Samples



# Call to Action

- Professional C# 2012 with .NET 4.5
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