

# XFS4IoT SP-Dev Workgroup

3 May 2022

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# Recap from previous meeting



- Framework migration to .Net6
- Cash acceptor release and KAL demo
- Framework release 1.0.0
- TPM framework

# Guest speaker: GPT

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# GPT

*Currency & Security Solutions*

Global Payment Technologies a division of  
Bidvest Protea Coin (Pty) Ltd

# WHO ARE WE

- GPT was established in 1997 as a supplier of bill validators to the casino industry;
- Since our inception we have expanded our product portfolio to include a comprehensive range of currency handling solutions;
- Distributing products such as Glory, Scan Coin & Sallen to the Gaming, Retail, Banking and CIT markets;
- GPT were acquired by Bidvest LTD in 2003, Bidvest is now represented on 4 continents with an annual turnover of 4 Billion USD.
- GPT is represented throughout South Africa and is currently providing solutions in 15 countries on the African continent.

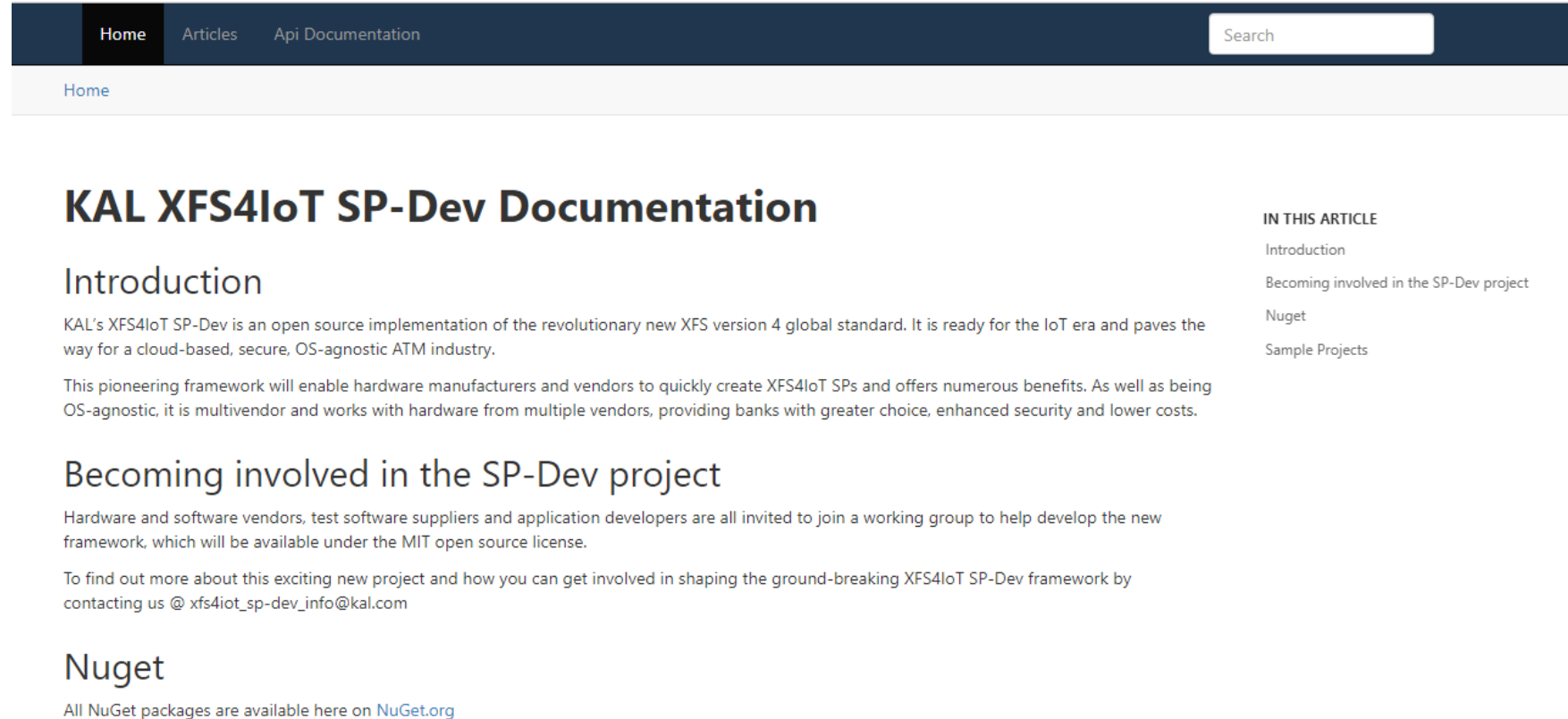
# WHAT DO WE DO...

- Our core focus areas being: Hardware sales and implementations, Software Solutions and Equipment
- end-to-end sourcing and supply of hardware
- customised software solutions and collaborative development initiatives
- Support and Maintenance programmes to support customer requirements
- Migrating devices and solutions to XFS 4 using the KAL framework

# Framework documentation

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- Documentation hosted as a static website on GitHub Pages
- Generated using DocFx tool



The screenshot shows the homepage of the KAL XFS4IoT SP-Dev Documentation website. The header is dark blue with navigation links: Home (active), Articles, and Api Documentation. A search bar is on the right. Below the header, the main heading is 'KAL XFS4IoT SP-Dev Documentation'. The 'Introduction' section describes the framework as an open source implementation of the XFS version 4 global standard, ready for the IoT era. The 'Becoming involved in the SP-Dev project' section invites hardware and software vendors to join a working group. The 'Nuget' section states that all NuGet packages are available on [NuGet.org](#). On the right side, there is a sidebar titled 'IN THIS ARTICLE' with links to 'Introduction', 'Becoming involved in the SP-Dev project', 'Nuget', and 'Sample Projects'.

Home Articles Api Documentation Search

## KAL XFS4IoT SP-Dev Documentation

### Introduction

KAL's XFS4IoT SP-Dev is an open source implementation of the revolutionary new XFS version 4 global standard. It is ready for the IoT era and paves the way for a cloud-based, secure, OS-agnostic ATM industry.

This pioneering framework will enable hardware manufacturers and vendors to quickly create XFS4IoT SPs and offers numerous benefits. As well as being OS-agnostic, it is multivendor and works with hardware from multiple vendors, providing banks with greater choice, enhanced security and lower costs.

### Becoming involved in the SP-Dev project

Hardware and software vendors, test software suppliers and application developers are all invited to join a working group to help develop the new framework, which will be available under the MIT open source license.

To find out more about this exciting new project and how you can get involved in shaping the ground-breaking XFS4IoT SP-Dev framework by contacting us @ [xfs4iot\\_sp-dev\\_info@kal.com](mailto:xfs4iot_sp-dev_info@kal.com)

### Nuget

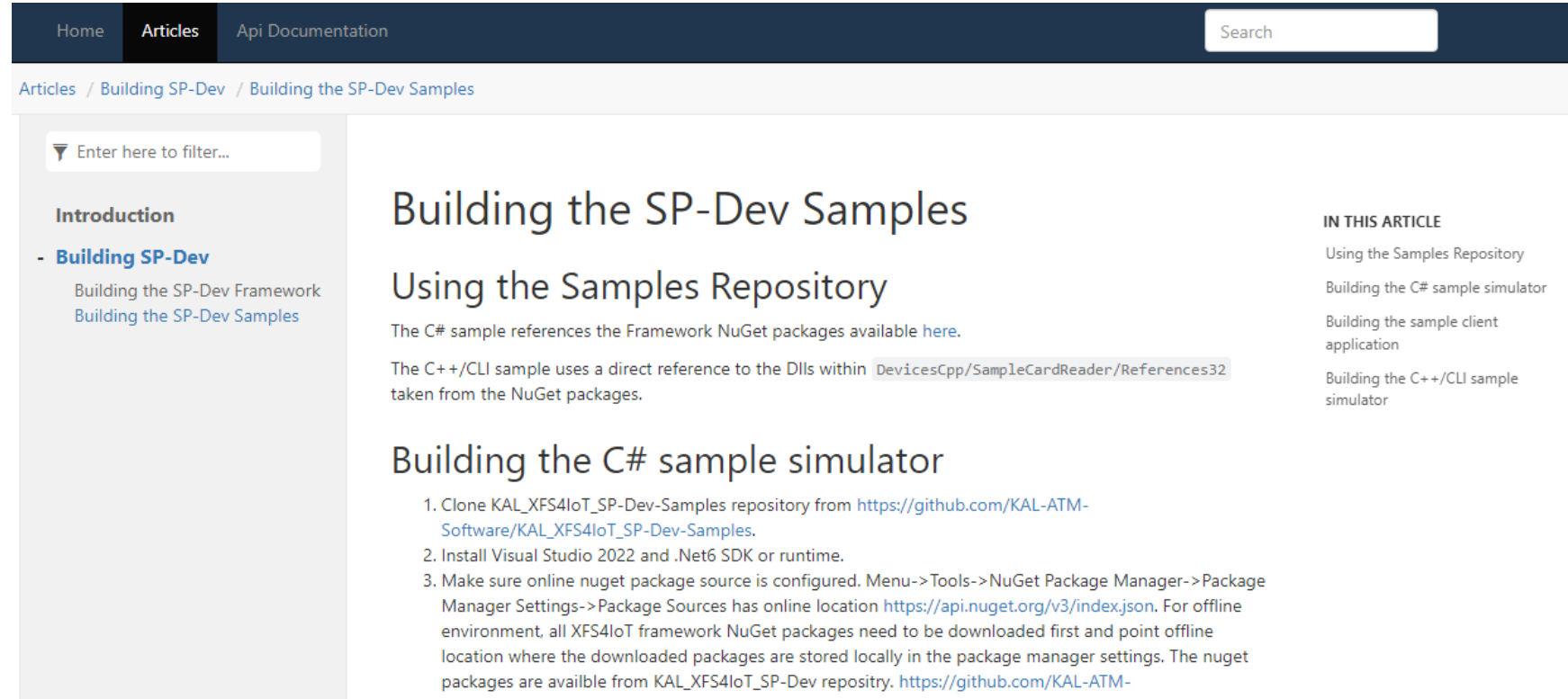
All NuGet packages are available here on [NuGet.org](#)

IN THIS ARTICLE

- Introduction
- Becoming involved in the SP-Dev project
- Nuget
- Sample Projects



- **Articles documentation created from markdown files**
- Guides to build the Framework and Samples available



The screenshot displays the KAL manual documentation website. The top navigation bar includes 'Home', 'Articles', and 'Api Documentation', with a search bar on the right. The breadcrumb trail reads 'Articles / Building SP-Dev / Building the SP-Dev Samples'. A sidebar on the left contains a filter input and a list of links: 'Introduction', '- Building SP-Dev' (highlighted), 'Building the SP-Dev Framework', and 'Building the SP-Dev Samples'. The main content area features the article title 'Building the SP-Dev Samples' and the subheading 'Using the Samples Repository'. The text explains that the C# sample uses Framework NuGet packages available [here](#), and the C++/CLI sample uses direct references to DLLs within `DevicesCpp/SampleCardReader/References32` taken from the NuGet packages. Below this is the section 'Building the C# sample simulator' with a three-step list: 1. Clone the repository from [https://github.com/KAL-ATM-Software/KAL\\_XFS4IoT\\_SP-Dev-Samples](https://github.com/KAL-ATM-Software/KAL_XFS4IoT_SP-Dev-Samples). 2. Install Visual Studio 2022 and .Net6 SDK or runtime. 3. Configure NuGet package manager settings for online or offline locations. A right-hand sidebar titled 'IN THIS ARTICLE' lists the topics covered: 'Using the Samples Repository', 'Building the C# sample simulator', 'Building the sample client application', and 'Building the C++/CLI sample simulator'.

- Comments extracted from all SP-Dev Framework classes
- Presented as an API Reference

```
/// <summary>
/// Assert value must be not null
/// <code><![CDATA[
///     var x = MyValue.IsNotNull().MyProperty;
/// ]]></code>
/// </summary>
[Contract]
30 references | Ross Kelly, 155 days ago | 2 authors, 2 changes | 2 work items
public static T IsNotNull<T>(this T? v, string message = "Value should not be null") where T:struct =>
```

HomeArticlesApi Documentation

Search

Api Documentation / XFS4IoT / Contracts

Enter here to filter...

ConfigurationsConfigurations.DefaultContractAttributeContractsDataTypesAttributeErrorHandlingErrorHandling.ErrorDelegateErrorHandling.TestsEventAttributeGlobalILoggerILogger.IMessageDecoderInvalidDataExceptionMessage<T>MessageBaseMessageDecoderMessageDecoder.AutoPopulateTypeMessageHeaderMessageHeader.TypeEnumMessagePayloadBase

IsNotNull<T>(T, String)

Assert value must be not null

var x = MyValue.IsNotNull().MyProperty;

Declaration

public static T IsNotNull<T>(this T v, string message = "Value should not be null") where T : class

Parameters

Type	Name	Description
T	v	
System.String	message	

Returns

Type	Description
T	

IN THIS ARTICLE

Properties

Methods

Assert(Boolean, String)

Fail(String)

Fail<T>(String)

Ignore<T>(T)

Is<T>(T, Boolean, String)

IsA<T>(Object, String)

IsFalse(Boolean, String)

> IsNotNull(Object, String)

IsNotNull<T>(T, String)

IsNotNull<T>(Nullable<T>, String)

IsNotNullOrWhitespace(String, String)

IsNull(Object, String)

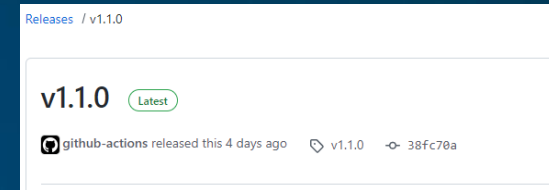
IsNull<T>(T, String)

IsNullOrEmpty(String, String)

- Currently API Documentation and guides to build SP-Dev projects are available
- Plan to expand guides further and include frequently asked questions
- Documentation will be updated with each framework release
- Pull Requests welcome to add comments within the Framework
  - We will be working on this internally too

# Framework update and next meeting

- **New Release version 1.1.0 available**



- Commits include all the changes for issues and feedback reported by members
  - Issues have been created on GitHub
- Update in the sample framework including for NuGet package setup
- Any feedback, bugs, changes can reported/suggested to KAL via GitHub (Issues, Pull requests...)

## Zoom

- First Tuesday of each month at 1300 UK time for 30 mins

**Next call: 7<sup>th</sup> June 2022, 1300 UK, 0800 US EST, 2100 Tokyo time**

**Calls are 30 mins long**

**We will continue to use Zoom**

(Interpretation in Japanese, Chinese and Spanish using Zoom's interpretation feature)