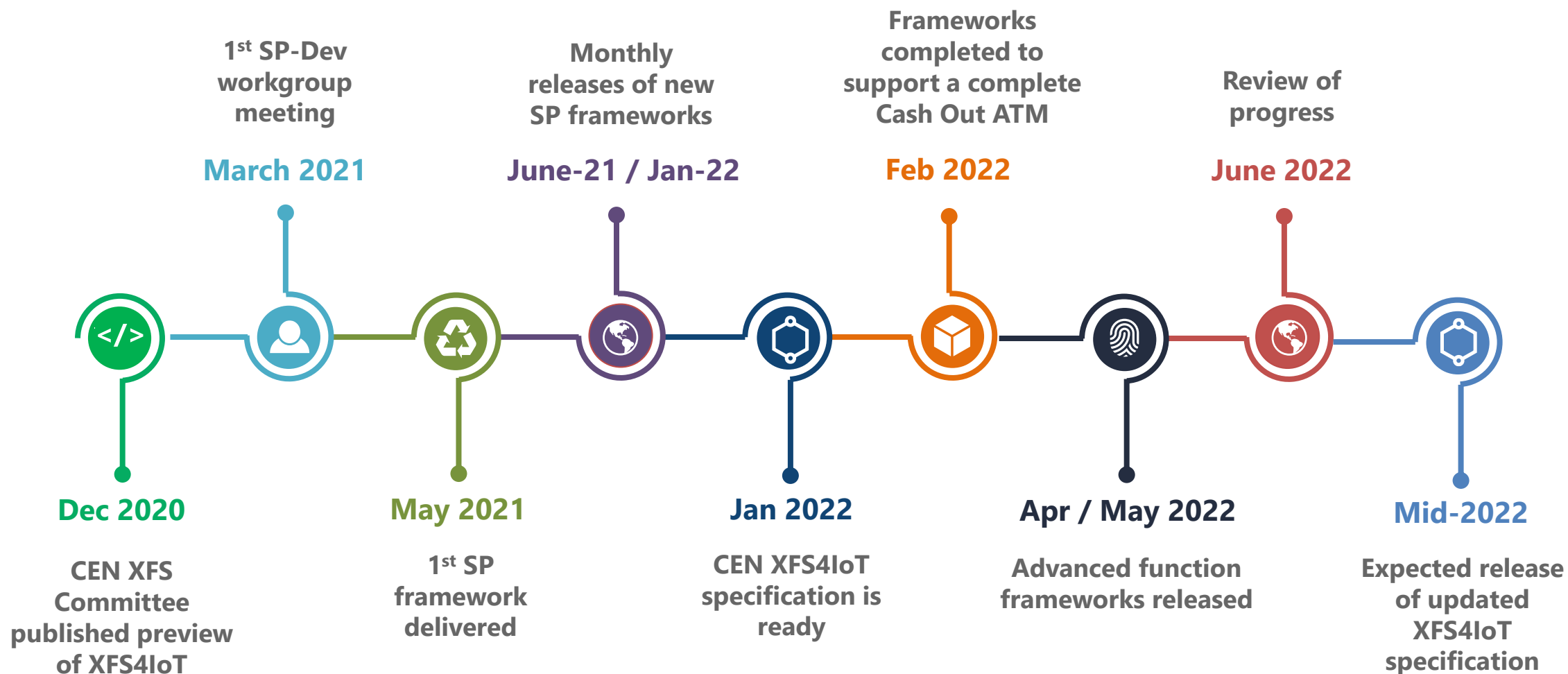


XFS4IoT SP-Dev Workgroup

7 June 2022

- Retrospective of workgroup achievements
- SP Template
- Q&A frequently asked questions
- Roadmap and what's next

XFS4IoT Workgroup achievements



- Framework support for full Cash-out, Cash-In and Recycler ATMs
- Up-to-date with 2021-1 specification release

- | | |
|---|--|
| <input checked="" type="checkbox"/> <i>Card Reader with support for dispensing</i> | <input checked="" type="checkbox"/> <i>Printer / Guide lights</i> |
| <input checked="" type="checkbox"/> <i>Cash Dispenser without end-to-end security</i> | <input checked="" type="checkbox"/> <i>Vendor Mode and Vendor Application</i> |
| <input checked="" type="checkbox"/> <i>Text Terminal Unit</i> | <input checked="" type="checkbox"/> <i>Auxiliaries</i> |
| <input checked="" type="checkbox"/> <i>EPP Key Management and Crypto classes</i> | <input checked="" type="checkbox"/> <i>Barcode reader</i> |
| <input checked="" type="checkbox"/> <i>Keyboard and PinPad classes</i> | <input checked="" type="checkbox"/> <i>Biometrics - All biometric data types supported</i> |
| <input checked="" type="checkbox"/> <i>End-to-end security partially complete</i> | <input checked="" type="checkbox"/> <i>Cash Acceptor</i> |

XFS4IoT Workgroup Achievements



We have created and shared XFS4IoT videos on the YouTube KAL ATM Software channel.

YouTube



KAL XFS4IoT SP-Dev
Framework on Windows

411 views • 1 year ago



KAL XFS4IoT SP-Dev
Framework on Linux

613 views • 1 year ago



XFS4IoT SP-Dev framework -
E2E on a small device

123 views • 5 months ago



XFS4IoT SP-Dev PIN
encryption

99 views • 7 months ago



XFS4IoT SP-Dev demo with
PinPad

189 views • 8 months ago



XFS4IoT SP-Dev
CashDispenser demo

199 views • 9 months ago

XFS4IoT Workgroup Achievements



We have created SP framework code samples on GitHub for each device that we have released.

The screenshot shows the GitHub interface for the repository **KAL-ATM-Software / KAL_XFS4IoT_SP-Dev-Samples**. The repository is public and has 7 forks and 3 stars. The main branch is selected. The repository contains several files and folders, including `ClientTestApp`, `Devices`, `DevicesCpp`, `.gitignore`, `LICENSE.md`, and `README.md`. The `README.md` file is highlighted, showing its commit history and description.

Repository Details:

- Repository: KAL-ATM-Software / KAL_XFS4IoT_SP-Dev-Samples (Public)
- Notifications: 0
- Fork: 7
- Star: 3

Repository Navigation:

- Code (selected)
- Issues
- Pull requests (1)
- Actions
- Projects
- Wiki
- Security
- Insights

Repository Branches:

- main (selected)
- 1 branch
- 0 tags

Repository Files:

File/Folder	Description	Last Commit
ClientTestApp	Updated NuGet package version 1.1 to include changes made in ...	last month
Devices	Updated PlatformToolset to V143 for CashDispenserFirmware pro...	last month
DevicesCpp	- Added support for the encryptor SP using KeyManagement and...	9 months ago
.gitignore	Add Samples and TestClients	12 months ago
LICENSE.md	Add Samples and TestClients	12 months ago
README.md	Updated README.md for nuget package setup.	last month

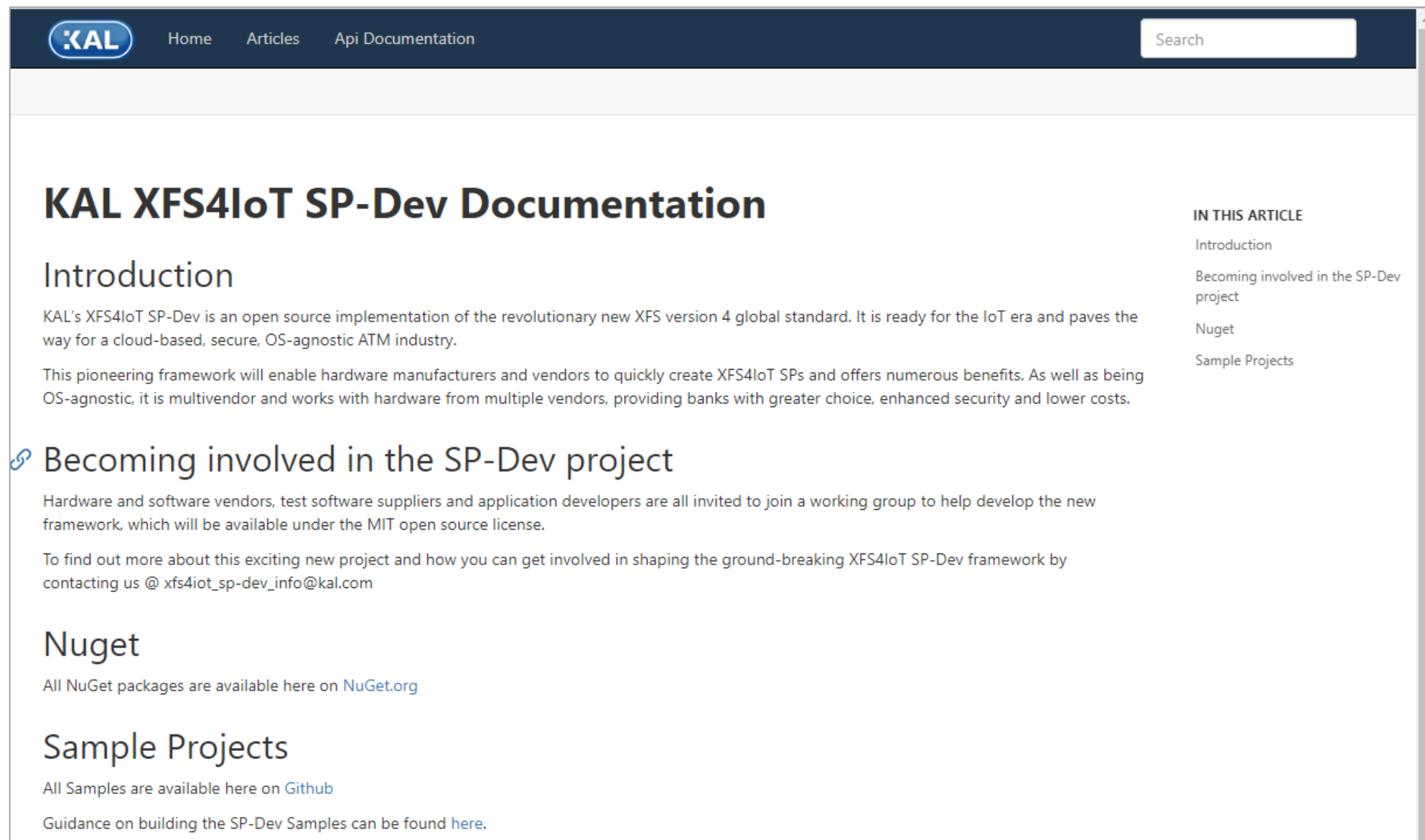
About:

- No description, website, or topics provided.
- Readme
- MIT license
- 3 stars
- 6 watching
- 7 forks

Releases:

- No releases published

There is XFS4IoT
SP-Dev
documentation
on GitHub.



The screenshot shows the KAL XFS4IoT SP-Dev Documentation website. The header features the KAL logo, navigation links for Home, Articles, and Api Documentation, and a search bar. The main content area is titled "KAL XFS4IoT SP-Dev Documentation" and includes sections for Introduction, Becoming involved in the SP-Dev project, Nuget, and Sample Projects. A right sidebar lists the contents of the article.

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

Nuget

All NuGet packages are available here on [NuGet.org](https://www.nuget.org)

Sample Projects

All Samples are available here on [Github](https://github.com)

Guidance on building the SP-Dev Samples can be found [here](#).


IN THIS ARTICLE

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

XFS4IoT Workgroup Achievements



The SP-Dev framework is available on GitHub.

 [Product](#) [Team](#) [Enterprise](#) [Explore](#) [Marketplace](#) [Pricing](#)

[Sign in](#) [Sign up](#)

[KAL-ATM-Software](#) / [KAL_XFS4IoT_SP-Dev](#) Public[Notifications](#) [Fork 17](#) [Star 26](#)[Code](#) [Issues](#) [Pull requests 1](#) [Actions](#) [Projects 1](#) [Wiki](#) [Security](#) [Insights](#)[main](#) [KAL_XFS4IoT_SP-Dev / Framework](#) [Go to file](#)

 **seishinakano** Minor changes to remove Pre-Release from NuGet package name. 38fc70a on Apr 28 [History](#)

..

 Core	The GetServices command was handled in the Common interface and reloc...	last month
 Server	The GetServices command was handled in the Common interface and reloc...	last month
 ServiceClasses	Minor changes to remove Pre-Release from NuGet package name.	last month
 UnitTestCore	- Migrated project from .Net5 to .Net6	2 months ago
 SPFramework.sln	Added support for BarcodeReader and Biometrics framework	3 months ago

XFS4IoT Workgroup Achievements



The SP-Dev framework releases are available on GitHub.

Product ▾ Team Enterprise Explore ▾ Marketplace Pricing ▾

Search / Sign in Sign up

KAL-ATM-Software / KAL_XFS4IoT_SP-Dev Public

Notifications Fork 17 Star 26

<> Code Issues Pull requests 1 Actions Projects 1 Wiki Security Insights

Releases Tags

Tags

v1.1.0 ...

on Apr 28 38fc70a zip tar.gz Downloads

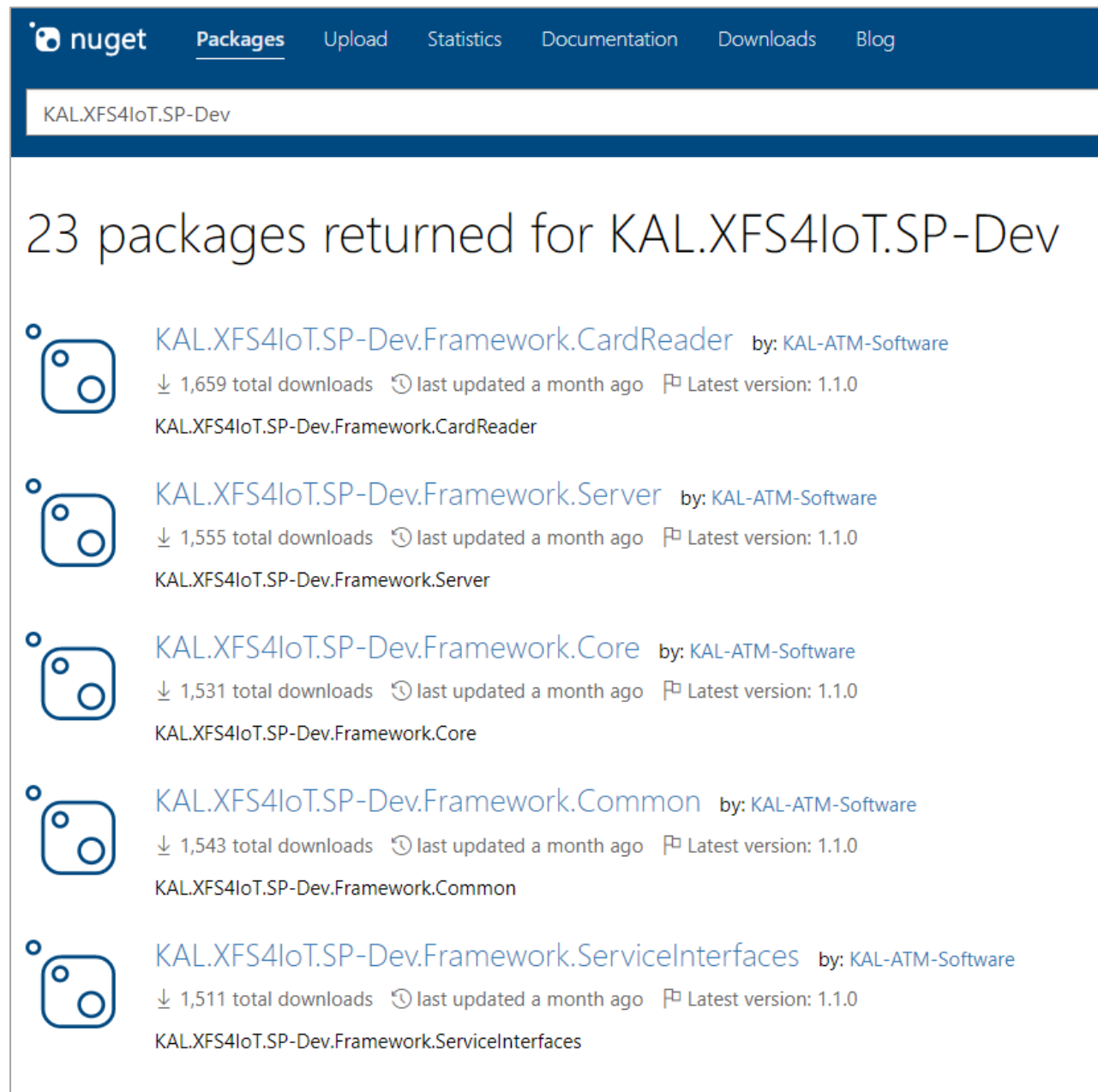
v1.0.0 ...

on Mar 30 6d875bd zip tar.gz Downloads

v0.0.10-alpha.1 ...

on Feb 25 9b6324d zip tar.gz Downloads

SP-Dev NuGet
packages are available
on nuget.org



The screenshot shows the NuGet.org website with the search results for the package ID "KAL.XFS4IoT.SP-Dev". The header includes the NuGet logo and navigation links: Packages, Upload, Statistics, Documentation, Downloads, and Blog. The search results section displays "23 packages returned for KAL.XFS4IoT.SP-Dev". Five packages are listed, each with a package icon, name, author, download count, last update time, and latest version.

Package Name	Author	Total Downloads	Last Updated	Latest Version
KAL.XFS4IoT.SP-Dev.Framework.CardReader	KAL-ATM-Software	1,659	a month ago	1.1.0
KAL.XFS4IoT.SP-Dev.Framework.Server	KAL-ATM-Software	1,555	a month ago	1.1.0
KAL.XFS4IoT.SP-Dev.Framework.Core	KAL-ATM-Software	1,531	a month ago	1.1.0
KAL.XFS4IoT.SP-Dev.Framework.Common	KAL-ATM-Software	1,543	a month ago	1.1.0
KAL.XFS4IoT.SP-Dev.Framework.ServiceInterfaces	KAL-ATM-Software	1,511	a month ago	1.1.0

XFS4IoT SP templates

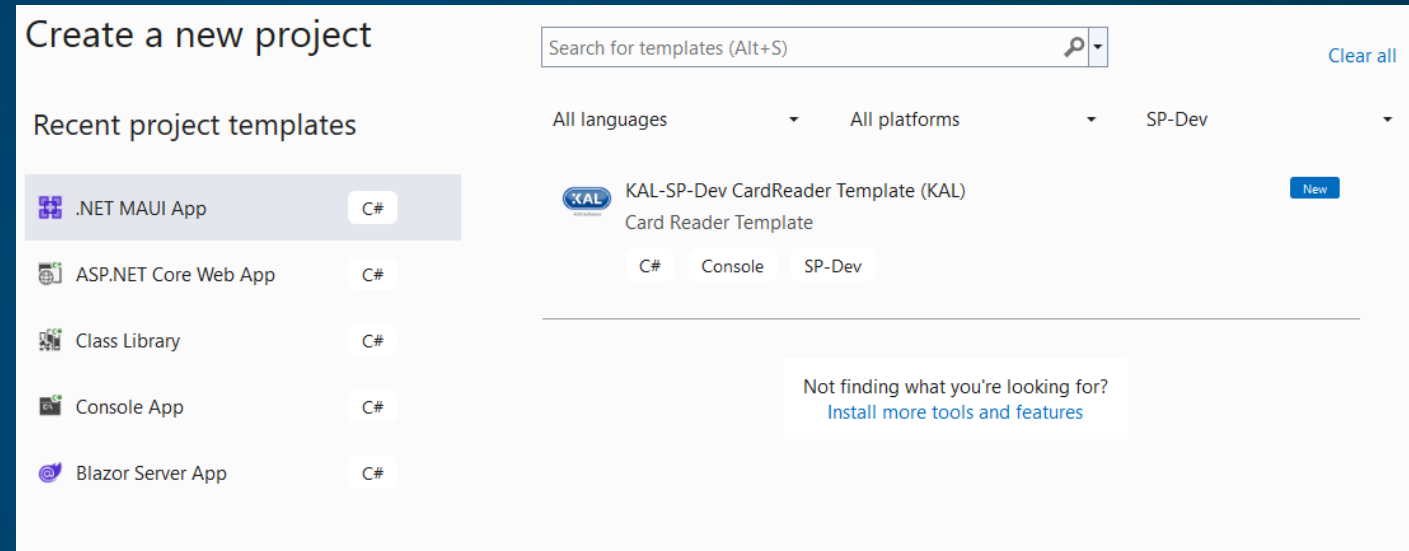
- .Net project templates
- Starting point for creating an XFS4 Service Provider
- Supplied as a NuGet package
- Can be installed via:
 - dotnet command line
 - Through IDEs such as Visual Studio

- Pre-requisites:
 - .Net 6 SDK
 - Visual Studio 2022
- Simple installation with command line:
dotnet new --install KAL.XFS4IoT.SP-Dev.Framework.Templates

XFS4IoT SP templates – How to use?



- Via VS2022 UI



- Command line from .Net CLI:
dotnet new spdev-cr (example for card reader)

Details available on the documentation page:

https://kal-atm-software.github.io/KAL_XFS4IoT_SP-Dev-Documentation/

XFS4IoT SP templates – What it does



Start a new SP project ...

The screenshot shows a 'Configure your new project' dialog box. At the top, it says 'KAL-SP-Dev CardReader Template (KAL)' followed by three tabs: 'C#' (selected), 'Common', and 'Console'. Below this, there are three main sections: 'Project name' with a text box containing 'CardReaderDevice'; 'Location' with a dropdown menu showing 'C:\Users\test\source\repos' and a browse button (...); and 'Solution name' with a text box containing 'CardReaderDevice' and an information icon (i). At the bottom left, there is a checkbox labeled 'Place solution and project in the same directory' which is currently unchecked. At the bottom right, there are two buttons: 'Back' and 'Create'.

Configure your new project

KAL-SP-Dev CardReader Template (KAL) C# Common Console

Project name

CardReaderDevice

Location

C:\Users\test\source\repos

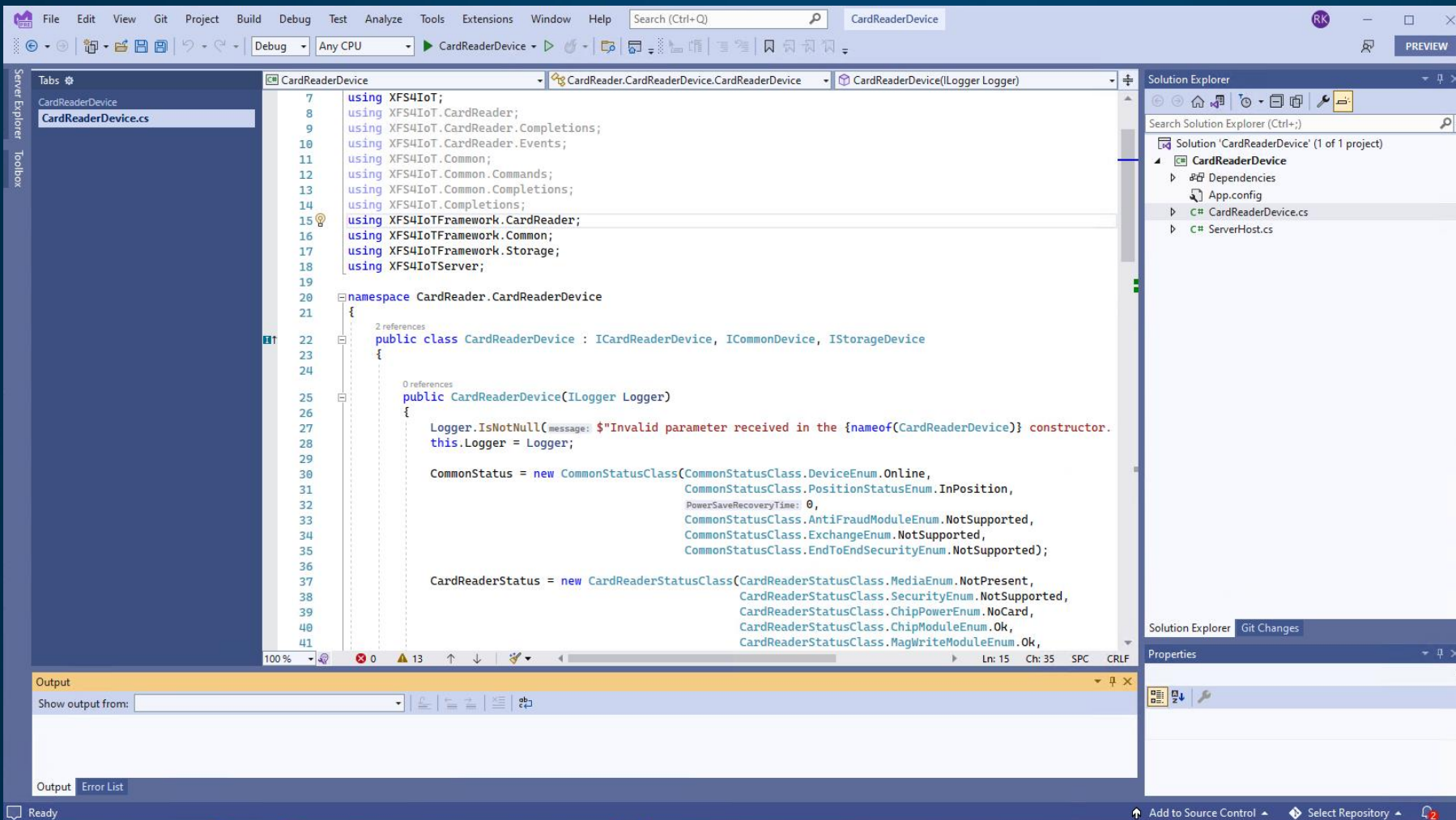
Solution name ⓘ

CardReaderDevice

☐ Place solution and project in the same directory

Back Create

XFS4IoT SP templates – What it does



...with all the structure for the customization defined!



FAQ

- Is the framework ready to write XFS4IoT production SPs?
Absolutely yes!
- What is needed to write an XFS4IoT SP?
*Everything you need is available on the KAL GitHub repos.
This includes framework, templates, samples and documentation.*
- Can I licence my XFS4IoT SPs to my customers the way I want?
Completely! KAL has no say in the end-user licencing model you choose.

- What to do if I want XFS4IoT SPs but don't want to develop them?
KAL or any vendor should be able to develop them.
- When will hardware manufacturers release XFS4IoT SPs?
We do not know. We recommend to ask the vendors directly to get their roadmap and timelines.
- Is it worth pushing towards XFS4IoT?
This is the future of the largest used ATM standard in the world... so we strongly believe so!



What's next?

- Next release planned for mid 2022
- Work in progress:
 - E2E security (other device commands...)
 - Cheque deposit interface
 - Clarification etc
- Multiple releases every year

- Stay up to date with CEN XFS specification
- Finalise E2E security support
- Include TPM framework
- Fine-tune framework by experience/feedback from XFS4 SPs development

Zoom

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

No call in July and August

Next call: 6th September 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)