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ETF PORTFOLIO DATA SERVICE

EXCHANGE TRADED FUNDS (ETF) - FAQs AND FILE DEFINITIONS

MAY 10, 2018

This document outlines Frequently Asked Questions and provides file definitions for the related to the DTCC ETF Portfolio Service.

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FREQUENTLY ASKED QUESTIONS FOR THE ETF PORTFOLIO COMPOSITION FILE OUTPUT

(AutoRoute: 02261256) Enhanced PCF File

1. What information is on the file?

File details are available on our web site; follow the link below click on "ETF" (you may need to scroll down to reveal/access them):

<http://www.dtcc.com/clearing-services/equities-clearing-services/user-documentation/client-center-formats/file-formats.aspx>

2. Are sample test files available for the new enhanced ETF output file?

Yes, you can obtain canned test output of the new Enhanced File Layout – 02261256 via the following link; click on "ETF" (you may need to scroll down) to reveal/access them.

<http://www.dtcc.com/clearing-services/equities-clearing-services/user-documentation/client-center-formats/file-formats.aspx>

3. What is the definition of cash in lieu Indicator?

The cash in lieu field pertains to components that can not be completed in-kind because the particular country does not allow for in-kind and requires cash to be provided instead of the security. NSCC's process enables this, the cash in lieu can be replaced for cash if used in the NSCC automated creation / redemption process.

4. Why would a component be represented with cash in lieu (CIL)?

A component can be identified for several reasons.

- One predominate reason it is used is to identify components that are domiciled in a country that does not allow the ETF to be created and redeemed in-kind (swapping one asset for another) and therefore must be replaced with cash.
- A second reason is that the component is ineligible for clearance and settlement at NSCC and DTC, for example government securities, but the ETF sponsor would like the component listed in the PCF output. This also enables an ETF sponsors to use the NSCC automated creation and redemption by using the cash instead of the ineligible components. In these two instances the component will be identified with a "Y" in the cash in lieu Indicator field in the Type 3 – Detail Component Record.
- A third reason would be when the ETF is create / redeem eligible through the automated system but the ETF sponsor or agent failed to indicate the component as cash in lieu. In those instances, NSCC will identify the component with an "X" in the cash in lieu Indicator field in the Type 3 – Detail Component Record.
- A fourth reason would be if the ETF sponsor and agent identified the basket as cash-only, yet provided components.
- **Additional information on cash in lieu:** Issuers can decide to substitute cash for securities (cash in lieu) to facilitate the create/redeem process. This is why ETFs published via NSCC do not necessarily match the full ETF portfolio holdings published on an Issuer's website. There are a variety of reasons why an Issuer may elect to make these substitutions (for example, a security is not DTCC-eligible, fractional shares, illiquid securities, security undergoing a certain corporate action). You would need to ask the Issuer directly to understand the precise reason for the difference.

5. In what instance would the Est Value of cash-in-lieu comp/CU equate to zero when all components in the portfolio are non-DTCC eligible (that is, all have the CIL flag active) but there is a value for the Est T-1 Cash amt/CU?

Not all non-US domiciled components will be included in the Estimated Value of cash-in-lieu Components per Creation Unit; these are considered in-kind exchanges, meaning that there may be no cash exchanged at settlement (aside from the cash component, Est T-1 Cash amt/CU).

6. Does the ETF PCF File contain full fund holdings?

No, the ETF PCF file is a representative basket or pro rata slice of the full fund holdings related as a result of some of the activities that could occur in the answer to question #4 above.

7. What do I need to do if I cannot gain access to the portal? If I forgot my user name or need to reset my password?

Reach out to the CSC at 1-800-253-2488 (Option 1) to reset your password. Let them know that you need help logging into the ETF Portal and provide the following information:

- Name
- Company
- Username (if you have it)
- Account number (if you have it)

8. Will Fixed Income portfolios have components with symbols?

No, tickers don't exist for fixed income, can be identified via the CUSIP/ISIN.

9. In the Foreign Portfolios, why do some of the SEDOL/ISIN fields contain a zero (0) or incorrect data?

If the component does not have a registered ISIN or SEDOL number, or if these are not specifically provided to NSCC by the ETF Sponsor or Agent, US ISIN may be listed rather than an ISIN identifier from a foreign venue.

Foreign Portfolios a.k.a Global Portfolios: These portfolios pertain to U.S. Exchange listed ETFs, an example is the iShares MSCI Japan Fund "EWJ" which contains components that are ineligible for settlement at NSCC or DTC.

10. When are the files transmitted?

The service level agreement for distribution of the primary file is at 10:00 pm ET (T-1) and includes custom portfolios for Authorized Participants entitled to these portfolios. A single supplemental file is distributed no later than 1:00 pm ET although it is generally available by 12:30 pm ET on T.

11. Why do we sometimes see Symbols and CUSIPs for components that are not on our asset master files?

Occasionally, there are ETF portfolios that have components that are experiencing a corporate action and in order to process the portfolio we must derive a user ticker symbol and CUSIP. These user tickers may include ZZZZ's or XXXX's at the end of the symbol or contain numerics.

In addition, when an ETF has a corporate action where the trading symbol remains the same but new CUSIP is assigned for example in a reverse or regular stock split, in order for NSCC to distribute the correct portfolio the evening before effective date, a temporary symbol (not used in the market) is created by using the first six digits of the new ETF CUSIP along with the new post split shares CUSIP. For example, if the effective date for the post split shares is 12/19/2014, on the evening of 12/18/2014 for trade date 12/19/2014 the PCF will contain this temporary symbol along with the new trading CUSIP, while the PCF distributed the evening of 12/17/2014 for trade date 12/18/2014 will contain the existing market trading symbol and the old CUSIP. This is necessary because NSCC still needs to process any creation and redemptions on 12/18/2014 for the pre split ETF shares that exist in the old CUSIP and trading symbol while distributing the new post split portfolio and the new CUSIP.

12. Does NSCC calculate the various cash amounts, if so how? If not, from where do you get it?

All the cash amounts are submitted to NSCC by the ETF agents and NSCC redistributes the information to its subscribers. We cannot validate the Issuer, Sponsor or the Agents calculation. However, Key Definitions beyond what is available in our file formats is included in this document. Should you need additional information as to a particular calculation please contact the ETF Agent or Issuer for that particular ETF.

13. Does the PCF contain the ETF Trading Symbol or the iNAV (Intraday Net Asset Value) Symbol? Trading Symbol.

14. What does it mean if we receive a zero (0) in the cash amounts for a particular ETF portfolio in the header record?

When a portfolio is not submitted, we carry over the previous day's portfolio and zero out the case amounts; we use the previous day's PCF and zero out the Estimated T-1 Cash Amount per CU, Estimated Value of CIL Components per CU, the NAV per CU, the Total Cash Amount per CU, the Dividends Outstanding per ETF various cash amounts and the Total Shares Outstanding per ETF. This alerts subscribers that the previous business days file will be used should any creation or redemptions occur for the particular ETF. In addition, when using a prior day's portfolio, field 30 of the Type 2 Portfolio Header Record is identified with a "Y". We plan to expand this capability for portfolios designated as "cash only" in 2015. Also, we advise the customers in the ETF Portal "submission type" of the browser and field "Prior Day's Portfolio being used" that it is a prior day's portfolio.

15. How are newly launched ETFs designated?

This is a decision made by the product sponsor and the ETF agent. Generally, if the basket components are ineligible to clear through NSCC and DTC they will be designated a Foreign Portfolio. In the case of ETFs that contain corporate, municipal, mortgage-backed and U.S. Government fixed income securities, they will be almost always designated as a Domestic Portfolio.

16. How can I identify when a newly launched ETF's portfolio is added to the Consolidated PCF?

When a new ETF is added to the PCF file you will see a value "Y" (for yes) in field 33 in the Type 2 - Portfolio Header Record. There may be instances where a sponsor and ETF agent provide the portfolio before it has begun trading. This designation remains until the first day of trading in the new ETF begins. When new components are added to an existing ETF's portfolio in the PCF file, you will see a value "N" (for new security) in field 10 in the Type 3-Detail Component Record.

You will also receive live e-mail alerts whenever a new portfolio is added to your subscription. However, you must be subscribed to ALL in the portal/auto-subscribed and you must make sure you add a valid e-mail address in the contact management section of the ETF Portal located at the top under "Update Profile."

17. Why don't the Domestic Portfolios contain the Components' Closing Price?

Because the PCFs are distributed the night before trade date or T-1 and apply to tomorrow's portfolio.

18. Are all US Exchange listed ETFs available on the NSCC ETF Portfolio Composition Files?

Virtually every U.S. listed ETF's portfolio are in the file including the converted HOLDERS product to an ETF structure. Exchange Traded Notes and ETFs that are backed by physical commodities, such as GLD and SLV are unavailable because there isn't a portfolio to distribute and the price of the commodity is quoted in real-time.

19. Is the Exchange Indicator available in the ETF Portfolio Composition File?

No, this information can be obtained from the listing marketplaces themselves and the market of execution of the component does not have any relevance when creating and redeeming ETFs.

20. For components domiciled in outside of the United States, does DTCC receive any international exchanges indicators?

No, since these securities are NSCC and DTC ineligible we do not classify the

21. What is a custom portfolio?

A custom portfolio is used when an Authorized Participant has restrictions on what component(s) it can own in a standard portfolio. The component(s) are typically replaced with the estimated cash value of the component. The agent and the ETF are responsible to provide the custom portfolio to NSCC in two ways. They can either provide the clearing members number or if the agent wants to distribute the custom portfolio to all of its APs they may do so using the LIST feature when they transmit. Regardless of how the custom portfolio is received, the ETF application will automatically provide this information to those users that are authorized to receive it from the ETF agent.

22. What are supplemental files?

Supplemental portfolio files exist because a sponsor or agent has determined that they need to correct a previously submitted ETF portfolio or they failed to submit an ETF portfolio (on T-1) and do not want to use the prior days portfolio for distribution and creation and redemption processing on T. In those instances, the ETF Browser is updated immediately upon receipt of the new ETF portfolio, an e-mail alert is provided for those users who have updated their profile in the browser with a final data file that is transmitted no later than 1:00 p.m. that is used for that day's creation and redemption processing. The supplemental data file only contains any new submission and not a redistribution of the previous (T-1) file.

23. When does the When Issued Indicator field apply in the PCF?

The WI indicator only applies to the component because ETFs do not trade on a WI basis. When an ETF splits or reverse splits, the listing market and the sponsor will request the issuance of a new CUSIP number to identify the post-split ETF security. The WI indicator may exist for a component although industry practice has moved predominately to issue a new CUSIP for the post-split shares.

24. When would an ETF's Portfolio ID formerly referred to as Instruction CUSIP change?

When the ETF has a corporate action event that necessitates a CUSIP change. However, it will not change if the ETF has a trading symbol (ticker) or description change.

25. Why wouldn't an ETF's ticker symbol be available in the PCF if it was there previously?

It could have been delisted in the case of liquidation or some other corporate action may have occurred.

26. What does the ETF Classification Code represent in the Type 2: Portfolio Header Record?

The classification is at the ETF level. The values will include: Equity, Fixed Income, Commodity, Mixed Asset, Alternative and Currency. You will find a detailed description in the Key Definition section of this document.

27. What do the Component ID Codes in Field 6 of the Type 3 Detail Component Record represent?

Please refer to the Type 3 Detail Component Record in the Key Definition Section of this document

28. For the component undergoing a corporate action, under what circumstances will the corporate action indicator be populated?

The corporate action indicator will be provided as soon as DTCC receives information on the corporate action. Please note there are two indicators, one for a mandatory corporate action and one for a voluntary. An example of a mandatory would be a stock split or name change. An example of a voluntary would be a tender offer.

29. The current version of the PCF includes equities and fixed income securities, will swaps, futures, non deliverable forwards and options also be included?

We will provide information on any NSCC and DTC ineligible securities that are not represented by a CUSIP, ISIN, SEDOL, Bloomberg, Reuters, ICE/NYSE Liffe ID using the expanded Component ID Code of "99". The values of these ineligible components are represented by cash. Please keep in mind that the data is optional and dependent upon the product sponsor and ETF agent.

30. Does DTCC provide Undertakings for Collective Investment in Transferable Securities (UCITS)?

No, because they are European listed ETFs, and we only provide U.S. listed ETFs that are registered under the Securities Act of 1933, the Exchange Act of 1934 and the Investment Company Act of 1940.

31. What is the definition of External Settlement Date?

The External Settlement Date is an optional field that can be used by the ETF agent for Foreign based ETFs (designated as such on the PCF output) that are not eligible for creation or redemption through the NSCC automated process. If the components are ineligible to clear and settle at NSCC or DTC, the agent will use this field to specify the number of business days the component should settle on. It was intended to assist ETFs that have component(s) that settle in less than or greater than three business days. The field is a pass through and is not an edited field but must be numerics

32. Why do we receive ETF portfolios without any components?

They contain ineligible components that the ETF sponsor and agent decided not to include and are substituted for cash. These portfolios are referred to as cash based baskets. For example, inverse leveraged ETFs are always represented by cash to NSCC.

33. Why would the component count in a portfolio be "0"?

Because it is a cash only basket.

34. What does the Sign Field for Component Quantity field in Type 3 Record in position 81 represent?

It is used for ETFs that are considered long or short funds. These components are intended to provide customers with what is essentially memo information and components identified as such cannot be part of the in-kind creation and redemption process unless they are substituted by cash. They are not very common.

35. Why would we see a Component ID Code =4 and the Component Id of "***"?**

As it pertains to ***** it may occur in rare instances for ETFs designated as Foreign if the ISIN we are provided is US based and eligible for limited depository service (DTC) for example pledging of securities for collateral, but ineligible for clearance and settlement at the clearing corporation (NSCC) we can provide some information because it is a U.S. based ISIN. If it is a non US based ISIN we don't have any information that pertains to them nor the SEDOL and therefore accept or pass through what description is provided to us by the sponsor or agent.

36. Can I reconcile Record Type 3, field 6 (Component ID Code) with the Record Type 2, Estimated T-1 Cash Amount Per ETF?

As the 99 code is pass through information that we do not validate, you may want to contact the ETF sponsor or an Authorized Participant you use for your creation and redemptions for that information directly.

37. Why would I see multiple rows of the same component ID for the same ETF fund?

There are instances where because the currency is of such a small amount and the component quantity is large, in order for the sponsor to provide the total quantity of the basket's component, they need to provide several records of the same component ID. Hence, the individual component is listed multiple times in the same basket. For the purposes of basket valuation or create/redeem processing, you should be accumulating the same component's ID within the specific ETF basket.

38. What is the reason that we would see Type 3, Component ID Code = 1 and Component ID doesn't contain a valid CUSIP?

There are ETFs that are not create / redeem eligible through the NSCC automated process and the sponsor and agent want us to distribute the components of the ETF to APs and other users of the PCF files even though the components are not NSCC and DTC eligible. In some instances, for example "BKLN" the PowerShares Senior Loan Portfolio ETF the sponsor and agent have decided to identify the ETF as a cash only portfolio so they can create and redeem through the automated process and we can still distribute the components.

39. What would be the reason that we would see Type 3, Component ID Code = 4 but the first 12 characters of the Component ID are not a valid ISIN?

There may be cases where because the ETF is not Create and Redeem eligible through NSCC and the component security, in this case the ISIN provided by the sponsor or ETF agent, is not validated because the security is ineligible at NSCC and DTC.

40. What would be the reason that we would see Type 3, Component ID Code = 4 but the first 7 characters of the Component ID are not a valid SEDOL?

NSCC does not validate SEDOL numbers. If the component does not have a registered ISIN or SEDOL number, or if these are not specifically provided to NSCC by the ETF Sponsor or Agent, US ISIN may be listed rather than an ISIN identifier from a foreign venue.

41. What would be the reason that we would see Type 3, Component ID Code = 4 but only an ISIN is designed in the Component ID field not an ISIN/SEDOL?

ETF agents and sponsors do not always provide a SEDOL and ISIN number for a component. If the component does not have a registered ISIN or SEDOL number, or if these are not specifically provided to NSCC by the ETF Sponsor or Agent, US ISIN may be listed rather than an ISIN identifier from a foreign venue.

42. Why would an ETF Fund be represented multiple times in the PCF file with slight variations in its name? For example, the addition of “02XXXXCR”, “02XXXXRD” in the ETF Fund name.

Sponsors determine that the creation basket for Authorized Participants may need to be provided that is different than the tracking basket. These baskets will have a recognized S & P CUSIP but will have a symbol that is not utilized in the markets, for example, AGGCR which is the creation redemption basket for the iShares AGG the ETF, whereas, CR means the creation basket. In many instances there is also a redemption basket which in the case of AGG would be AGGRD. Sponsors may use the multiple basket approach because obtaining all of the components for creation and redemption may be difficult yet the sample size of the creation and redemption baskets is sufficient to enable the ETF to correctly track the particular index. This scenario is referred to as the multiple basket approach and is not the same as custom baskets.

If the ETF symbol contains characters that are unfamiliar to the client, the client should reach out to the sponsor for clarification.

43. Is there anything that DTCC can do to so the fund doesn't change the submission format to satisfy the 3 basket data model witnessed in Fixed Income baskets?

The multiple basket approach used by fund sponsors is under their control. If the fund decides it only needs a separate redemption basket and does not need a separate creation basket that is their decision that they have most likely worked out with their Authorized Participants who create and redeem the ETF shares for secondary market trading.

44. Why does the extension on the name of the PCF file change, e.g. 1256.C01 to 1256.C02?

The primary file will always have the extension C01 and the supplemental file will have the extension C02.

45. Would there ever be an instance where the NAV per ETF wouldn't match what the sponsor publishes (official NAV)?

DTCC receives and distributes the NAV per ETF that is sent from sponsor; however if a distribution occurs there is an adjustment made to this value. They should be used for calculation purposes only. The official NAV (unadjusted NAVs) file is sent separately to APs, vendors and sponsors for publication.

46. If there is cash reflected in component level, should it be rolled up and reflected in the Est value of cash in lieu comp/CU in the portfolio/header record?

Yes.

47. **Why would a component that was delisted be included in a portfolio in the ETF PCF?**
- a. JPGE and JPIN are US Listed PCF's with Foreign Global Components that are not eligible at DTC or in CNS.
 - b. These types of ETFs are coded as Foreign on our master because the components are not eligible and because NSCC does not Create and Redeem these PCF's. They are created away from NSCC.
 - c. For these types of funds we do NO validation on the listing of the underlying. As long as the ID submitted by the Agent / Issuer fits the pre edit process for the Identifier, we will publish the underlying.
 - d. Therefore, the client should direct the question to the agent or the issuer.
48. **In Type 3 – Detail Component Record, Component ID field if the Agent sends a value and it doesn't consume the entire 25 spaces, what is the alignment of what is sent and how are the extra spaces handled?**
- Unused positions in the Component ID field are "blank" spaces left justified, not zeroes.
49. **Under what conditions is a 'M' corporate action indicated?**
- Active Mandatory.
50. **Under what conditions is a 'V' corporate action indicated?**
- When it is effective.
51. **What happens if there is both a mandatory and voluntary event in flight at the same time?**
- Both will be indicated.

Note

We do not report on principal income events and certain redemptions.

52. **In what format are the ETF PCF and Historical files available?**
- Text.
53. **At this time, can DataPro Sales clients access custom baskets?**
- Distribution of custom baskets is a feature available to ETF agents and ETF authorized participants at this time.
54. **Do ETF PCF No-CUSIP clients receive the supplemental file?**
- Yes.

55. Why would an ETF portfolio show with zero components?

- a. Because they aren't being provided by the Agent. If components aren't provided, it is possible that it isn't clearing and settlement eligible (C&R) and/or is a cash (cash only) basket. A cash basket can be cleared and settlement through NSCC but the Agent might elect not to.
- b. If the Agents did choose to C&R these cash baskets they would utilize the 99 in the Component ID Code in Type 3 Detail Component Record (this is a highly recommended approach).

56. Are foreign portfolios part of the ETF PCF No-CUSIP file?

Yes, but ensure to review the sample on dtccdata.com (Learning Center) to validate that the file matches the specific need.

57. What is the difference between the CUSIP and no-CUSIP version of the ETF PCF?

The files follow the same spec except the following fields are blanked out: Type 1 –Header Record: Fields 2 & 3 and Type 2 – Detail Component Record: Fields 2, 3 & 7.

58. Does the ETF PCF have constituent history for mutual funds and money market accounts?

No, the ETF PCF doesn't include these products (along with DTCC doesn't have these as products either because neither is directly traded on an exchange/there is no create and redeem related to them): money market or mutual fund at the ETF portfolio level.

59. Why are certain values not available in the ETF historical file for ETFs that were actively trading on a given date?

It is possible that information was not supplied by an agent or information was not available in the NSCC security master file.

60. How are short positions handled in the ETF PCF, would we see a negative component?

- a. Reference in the FAQs, this is noted in the field: 10) Sign Field for Component Quantity.
- b. Yes, we handle negative component values; however, these components may not be created or redeemed in-kind.

61. How are the shares held in each component determined by shared or percentage without rounding?

We wouldn't have fractional shares at the component level because cash value has been adjusted to include the fractional shares.

62. How do we know if the portfolio is a carry over from the previous day?

Portfolio Type is = Yes.

63. Why would some equity (represented in foreign baskets) portfolios have components without symbols?

NSCC does not store information about foreign securities with foreign ISIN identifiers on the NSCC security master, thus we have no data with which to enrich or return. If the Agent chooses not to provide these identifiers when submitting the basket, which we will pass along if provided, then the data will not be available.

64. How does the new 022623335 Auto Route Supplemental Enhancement work?

This new optional output (AutoRoute 02262335) is a series of near real time files that collectively make up the 12:30pm Supplemental File (AutoRoute 02261256). The AutoRoute 022623335 file is available in the same format as the Enhanced Portfolio Composition File AutoRoute 02261256. The 12:30pm file will continue to be comprehensive batch output of all supplemental portfolios.

65. How large the ETF historical files?

- a. The daily ETF PCF File is approximately 430,000 records is about 16.4 MB.
- b. The history files are 3 month intervals (from Nov 2007) and the largest file is 10 GB. The sizes decrease the further we go back in time.. The sizes decrease the further we go back in time.

Record Count	Bytes	MB	GB
25,595,490	10,238,196,000	9,763.90	9.54
26,249,641	10,499,856,400	10,013.44	9.78
24,584,562	9,833,824,800	9,378.27	9.16
22,663,478	9,065,391,200	8,645.43	8.44
21,407,412	8,562,964,800	8,166.28	7.97
21,923,422	8,769,368,800	8,363.12	8.17

64. Should multiple instances of a component within a portfolio basket be considered an error?

The NSCC does not validate unique instance of components within portfolio baskets. Refer to the ETF sponsor if needed.

65. Why do ETFs that are marked as CASH ONLY have zero components?

It isn't required by Sponsors and agents to provide component detail for cash only baskets. These ETF's do have reportable equity components but aren't being reported although the functionality to do so is there.

66. Does the Non-CUSIP version of the ETF PCF – Autoroute 02260629 include Foreign ETFs?

No.

67. Why would I not see an ETF in my daily ETF PCF file that I originally subscribed to if that ETF went through a corporate action?

- a. The logic of the ETF PCF is driven by the NSCC id and if a corporate action changes the ETF's CUSIP, the NSCC id also changes. Therefore, if the client is not subscribed to all, a new ETF (new NSCC id) will not automatically show up in their file, they must proactively subscribe to it on the ETF PCF portal.
- b. If they were subscribed to All, then it would automatically be added to their daily ETF PCF.

68. Will and ETF PCF file be sent during holidays or weekends?

A file is sent at the end of a trading day when markets are open. If the markets are not open during a holiday, then the client will use the last file sent to them for the next trading day's activity.

Bonny original: A file is sent at the end of a trading day when the markets are open. If the markets aren't open during a holiday, then the client will use the last ETF file sent to them for the next trading day activity.

TRANSMISSION OPTION QUESTIONS

1. What transmission options are available for us to receive the PCFs?

You may receive files in two ways, either through pulling the data (get) or by DTCC pushing the data to you. Available protocols include:

- File Transfer Protocol (FTP) “get” of the data via broadband through the Internet.
- TCPI = FTP push via the Internet (encrypted)
- TCP = FTP push via DTCC SMART Circuit
- NDM (Network Data Mover) over DTCC SMART Circuit

KEY DEFINITIONS WHEN SUBSCRIBING TO ETF PORTFOLIO DATA FILE (AUTOROUTE #02261256)

Header Record = 1

1. **Record Type:** 01 = Header Record
2. **File Description:** "Portfolio Composition"
3. **ETF Agent:** NSCC Member Number right justified with leading zeros.
4. **File Identifier:** Input File Number
5. **NSCC Processing Date:** CCYYMMDD
6. **NSCC Processing Time:** HHMMSS

Portfolio Header Record = 2

1. **Record Type - 02** = Record Type 2 (one per portfolio)
2. **ETF Trading CUSIP:** This is the CUSIP that represents the ETF in the secondary market. It is assigned by S & P.
3. **ETF Trading ISIN:** This is the ISIN number that represents the ETF in the secondary market.
4. **NSCC Portfolio ID:** NSCC assigned Portfolio ID of the basket. This used to be referred to as the Standard Instruction CUSIP. It is used by the Authorized Participant and the ETF agent in order to create and redeem the ETF that trades in the secondary market.
5. **ETF Description:** From NSCC Security Master if found, otherwise ETF Agent supplied description is used.
6. **Portfolio Trade Date:** This is the business day that pertains to the ETF's portfolio.
7. **ETF Agent:** NSCC Member Number right justified with leading zeros.
8. **Component Count:** This represents the number of components (sometimes referred to as the components) that comprise the ETFs basket portfolio.

For Custom Only: If field 31 = C for Custom

Component Count: This represents the number of components (often referred to as the components) that comprise the Custom ETFs portfolio. This will be less than the number of components in a standard ETF portfolio. For example, in the S & P MidCap "MDY" there are 400 components but in a custom standard portfolio there may be only 398 with the two missing components represented in the estimated and total cash amount per creation unit.

9. **Estimated T-1 Cash Amount per Creation Unit:** This figure consists of accumulated dividends less expenses through and including T-1, on a per-Creation Unit basis. This figure may include a cash in lieu amount for shares of any of the component stocks which may be excluded from the Creation Unit on Trade Date (T) due to a prolonged trading halt or other unusual circumstance. Such shares will be priced at the close on T-1.
- This amount may be used by traders as an “approximation” for the Total Cash Amount per Creation Unit which is determined at the close of Trade Date. Occasionally, this amount may be a negative value if, for example, more expenses have accrued than dividends in the early part of a particular dividend accrual period.
 - Similarly, on occasion the Total Cash Amount per Creation Unit might be negative as required to equate the value of the stock plus cash in the creation unit to the Net Asset Value of the ETF on a Creation Unit basis at the market close on trade date.
 - In instances where a ETFs portfolio is all cash (and the components are not listed for informational purposes) this amount will reflect the actual value of the entire portfolio, not just the accumulated dividends any balancing amount or cash in lieu shares. This is the same value that is reported in the Total Cash Amount per Creation Unit field.
10. **Sign field for Estimated T-1 Cash Amount Per Creation Unit:** “-“ indicates negative value Space = positive Value.
11. **Net Asset Value per Creation Unit:** This value represents the NAV of the ETF’s Creation Unit on T-1. This value may not be published by market data vendors. NSCC does not validate this NAV. value and if an agent does not provide the information for a specific ETF portfolio we do not calculate the value separately.
- For Custom Only: If field 31 = C for Custom:**
This value is identical to the standard portfolios NAV per creation unit.
12. **Sign field for Net Asset Value Per Creation Unit:** “-“ indicates negative value Space = positive Value.
13. **Estimated T-1 Cash Amount per ETF:** This figure represents the estimated cash amount that pertains to the ETF. This figure usually consists of accumulated dividends less expenses through and including T-1 on a per ETF security share basis. This figure does not include cash amounts delivered in lieu of shares excluded from the daily Creation Unit Portfolio. It can be a negative value if more expenses exist than income on T-1.
- For Custom Only: If field 31 = C for Custom:**
This figure represents the estimated cash amount that pertains to the ETF. This figure usually consists of accumulated dividends less expenses through and including T-1 on a per ETF security share basis. This figure does not include cash amounts delivered in lieu of shares excluded from the daily Creation Unit Portfolio.

For Foreign Only: If field 32 = F for Foreign:

For U.S. listed but foreign component based ETFs this figure represents the estimated cash amount that pertains to the ETF. This figure usually consists of accumulated dividends less expenses through and including T-1 on a per ETF security share basis. It can be a negative value if more expenses exist than income on T-1 including currency gain or loss.

14. **Sign field for Estimated T-1 Cash Amount Per ET:** “-“ indicates negative value Space = positive.
15. **Net Asset Value per ETF:** This value represents the NAV of the ETF on T-1. Market data vendors may publish this figure separately on Trade Date prior to the opening of trading. NSCC does not validate this NAV. value and if an agent does not provide the information for a specific ETF portfolio we do not calculate the value separately. There have been instances when the ETF agent has adjusted the NAV for distributions. In those rare instances, the unadjusted NAV is sent separately to AP, vendors and the sponsor for publication.

For Custom Only: If field 31 = C for Custom:

This value is identical to the standard portfolios NAV per creation unit.

16. **Sign field for Net Asset Value Per ETF:** “-“ indicates negative value space = positive value.
17. **Total Cash Amount per Creation Unit:** This figure represents the actual cash amount that pertains to a creation or redemption affected on trade date. For portfolios with components it reflects the accumulated dividends less expenses through trade date plus any balancing amount. It can be a negative value if more expenses exist than income on T. For cash based portfolios when the components are not listed for informational purposes, it is the entire value of the portfolio.

For Custom Only: If field 31 = C for Custom:

This figure represents the actual cash amount that pertains to a creation or redemption affected on trade date including the value of the missing components.

18. **Sign field for Total Cash Amount per Creation Unit:** “-“ indicates negative value space = positive value.
19. **Total Shares Outstanding per ETF on T-1:** This figure represents the total number of ETF share outstanding on the date the PCF is distributed (T-1).

For Custom Only: If field 31 = C for Custom:

This figure is identical to the total shares outstanding in the standard portfolio on the date the PCF is distributed (T-1).

20. **Dividend Amount per ETF on T-1:** For those ETFs that pay dividends, this represents the net income of the fund per Index Receipt as of T-1. It can be a negative value if more expenses exist than income on T-1. Not all ETF agents provide this information.
For Custom Only: If field 31 = C for Custom:
 This figure is identical to the dividend amount provided in the standard portfolio of the ETF.
For Foreign Only: If field 32 = F for Foreign:
 For U.S. listed but foreign component base ETFs that pay dividends, this represents the net income of the fund per Index Receipt as of T-1. It can be a negative value if more expenses exist than income on T-1 including currency gain or loss. Not all ETF agents provide this information.
21. **Sign field for Dividend Amount Per ETF on T-1:** “-“ indicates negative value space = positive value.
22. **Estimated Value of cash in lieu Components per Creation Unit:** For those ETFs with components the sponsor or agent has identified as deliverable by cash-in-lieu only, on T-1.
23. **Cash Only Indicator:** This identifies if the ETF’s portfolio can be created or redeemed for cash only because the components are ineligible for the automated create / redeem process. If the agent provides the components, NSCC will list the components that represent the cash for informational purposes only.
24. **ETF Expense Ratio on T-1:** Expressed in basis points and should represent the percentage of the fund assets, net of reimbursements used to pay for operating expenses and management fees, administrative fees and all other asset-based costs incurred excluding brokerage costs. Depending upon the agent’s role with the ETF sponsor they may be unable to provide this optional value.
25. **Total Net Asset Value of ETF Fund on T-1:** This represents the funds per-share price. It is the result of dividing the ETFs total net assets by its number of shares outstanding. Depending upon the agent’s role with the ETF sponsor the agent may be unable to provide this optional value.
26. **ETF Shares Per Create/Redeem Unit:** This is the number of shares that are created or redeemed for a particular ETF. For example, the S & P 400 MidCap Spider “MDY” can be created and redeemed in lots of 25,000 shares. The creation / redemption amount does not change for a custom basket even though less than 400 shares are in the portfolio.
27. **ETF Symbol:** From NSCC Security Master Database that represents the trading “ticker” in the U.S. secondary market.
28. **CNS Eligibility Indicator:** From NSCC Security Master Database.
29. **ETF Create Redeem Identifier:**
- Y = ETF Basket can be created or redeemed through the NSCC automated process.
 - N = ETF Basket cannot be created or redeemed through the NSCC automated process.
30. **Prior Days Portfolio being used:**
- Y = Prior day’s portfolio.
 - Space = Today’s portfolio.
31. **Custom or Standard:**
- C = Custom.
 - S = Standard
32. **Foreign or Domestic:**
- D = Domestic.
 - F = Foreign.
33. **NSCC New Portfolio:**
- Y = New portfolio.
 - Space = Existing portfolio.

34. ETF Classification Code:

- a. **Equity:** Exchange traded funds (ETFs) comprised of domestic or foreign securities and/or ADRs that track the performance of an equity index or a basket of stocks.
- b. **Fixed Income:** Exchange traded funds that invest in fixed income products, such as corporate, municipal, US government, government agency or foreign domiciled bonds.
- c. **Commodity:** Exchange traded funds with underlying investments in the futures contracts (not the actual physical commodity) that track the performance of an individual commodity or commodities, such as precious metals, energy or agriculture.
- d. **Mixed Asset:** Exchange traded funds comprised of a combination of asset classes, such as equities, bonds, commodities, that track a particular index, or a basket of assets.
- e. **Alternative:** Exchange traded funds that seek to replicate the returns of a benchmark index or basket of assets through the use of futures, swaps, and other ETFs.
- f. **Currency:** Assets in foreign exchange ("FX") spot or futures instruments a.k.a. Non-Deliverable Forwards.

In addition, for those ETFs that are leveraged and inverse leveraged an additional identifier will be provided identifying the number of times the ETF it is levered. For example, 1X, 2X or 3X's.

Detail Component Record = 3

1. **Record Type:** 03 = Record Type 3.
2. **ETF Trading CUSIP:** This is the CUSIP that represents the ETF in the secondary market. It is assigned by S & P.
3. **ETF Trading ISIN:** This is the ISIN number that represents the ETF in the secondary market.
4. **NSCC Portfolio ID:** NSCC assigned Portfolio ID of the basket. This used to be referred to as the Standard Instruction CUSIP. It is used by the Authorized Participant and the ETF agent in order to create and redeem the ETF that trades in the secondary market.
5. **Portfolio Trade Date:** This is the business day that the ETF's component in the portfolio pertains to.
6. Component ID Code:
 - 1 = CUSIP
 - 2 = SEDOL
 - 3 = ISIN
 - 4 = ISIN/SEDOL
 - 5 = Bloomberg
 - 6 = Reuters
 - 7 = ICE / NYSE Liffe 99 = Other.

We will provide information on any NSCC and DTC ineligible securities that are not represented by a CUSIP, ISIN, SEDOL, Bloomberg, Reuters, ICE/NYSE Liffe ID using the Other Code of "99". The value of these ineligible components are almost always represented by cash and a description of the asset type is provided by the agent. For example, some ETFs contain a cash coupon, a swap or futures contract that do not have any standardized identifier whose description can be provided in Field 18 Component Description. Please keep in mind that the data is optional and dependent upon the product sponsor and ETF agent.

7. **Component ID:** This is defined by the value in Component ID Code field.
- CUSIP Number:** This is the CUSIP number assigned by S & P of the component that is part of the basket of the ETF. It identifies domestic component.
 - SEDOL:** Official SEDOL number
 - ISIN:** Official ISIN number
 - ISIN/SEDOL:** Combination ISIN/SEDOL Number. Recommended for non-US domiciled securities.
 - o **ISIN Number:**
 - o **SEDOL Number:**
 - All other types:** Free form field identifying other type of asset components.
8. **Component Quantity:** The number of shares (if equity) or the par value (if fixed income) needed for one creation unit of the ETF index.
For example, for fixed income components, the component quantity represents the par value of the bond; multiply that value by the bond par value of \$100 to obtain one creation unit of that ETF. If a fixed income component quantity (par value is 4,345 and the bond par value is \$100, the AP would deliver \$435,400 (Par Value) of this bond (along with all other components) to create X number of ETF shares (the ETF creation unit size).
9. **Sign Field for Component Quantity:** "-" indicates negative value (short position)

Note

A component with negative quantity (short component), can only be created/redeemed for cash.

10. **New Security Indicator:** When a new security is added to a portfolio, an "N" is provided to identify the new security. Space = not new.
11. **Cash in lieu Indicator:**
- **Y** = ETF agent provided indicator for component to be substituted for cash in a create/redeem.
 - **X** = NSCC applied indicator for component to be substituted for cash in a create and redeem (per below mentioned rules).
 - **Space** = No substitution.

Note

CIL is set to X if one of the following is met:

1. Component is not create/redeem eligible in NSCC Security Master Database.
 2. Portfolio is a cash only portfolio.
-

12. **Component Symbol:** This is the trading symbol of the component that is part of the basket of the ETF. (For fixed income portfolios this field is blank)
13. **Component W I Indicator:** This identifies if the component is trading When Issued or Regular Way. For equities this indicator will almost always be a zero for regular way. For municipal bond components it may be a zero (0) for regular way, (1) for When Issued or (2) for WI going Secondary Market or RW trading. At most the 2 value will exist for 3 business days because the municipal security can trade WI and RW at the same time over the three day period.

14. **Component undergoing corporate action:**
 - Space = No Corporate Action.
 - M = Mandatory Corporate Action.
 - V = Voluntary Corporate Action.
15. **Component NSCC eligibility indicator:** Y = NSCC eligible. N = Not NSCC eligible.
16. **Component CNS Indicator:**
 - Y = CNS eligible.
 - N = Not CNS eligible.
17. **External Settlement Date:** ETF Agent provided settlement date for non-DTC settling components.
18. **Component Description:** Override input with description from NSCC Security Master Database, if available from the NSCC Security Master Database.

Trailer Record (new record) = 99

1. **Record Type:** 99 = Trailer Record – 1 per file
2. **Processing Date:** CCYYMMDD
3. **Primary Transmission or Supplement:**
 - P = Primary Transmission.
 - S = Supplemental Transmission after 12 midnight beginning on trade date.
4. **Record Count:** Number of records in transmission (including trailer). Does not include any invalid and rejected records from ETF agent.

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