

TAX FORM DESIGN STANDARDS AND GUIDELINES

This document sets forth the tax form design standards and guidelines recommended by the National Association of Computerized Tax Processors for the creation and reproduction of substitute tax forms.

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1. Introduction to the NACTP

1.1 History

In recognition of the increasing value and need for streamlined income tax preparation, six computerized tax processing firms founded the **National Association of Computerized Tax Processors** (NACTP) in 1969. Today, the NACTP includes in its membership over 50 tax preparation software companies, electronic filing processors, tax form publishers, tax processing service bureaus, and others.

1.2 Goals

Through the Association, these competing firms work together towards the following goals:

- Improve the relationship and communication between computerized tax processing companies and government taxing agencies.
- Maintain professional standards in the computerized tax processing industry.
- Encourage the standardization of tax forms; the timely distribution and clarification of forms, instructions, and regulations; and the simplification of approval procedures.
- Promote the standardization and simplification of electronic and alternative filing systems.
- Function as a nonprofit association formed for the mutual benefit of its members and government taxing agencies.

NACTP member companies and government taxing agencies share a common goal: to provide the best possible service to taxpayers. By working together, this goal can be achieved. The NACTP achieves this goal by using member companies' expertise and knowledge of software systems to help government agencies implement new technologies.

1.3 Organizational Structure

The NACTP is comprised of four distinct committees:

- Government Liaison Committee (GLC)
- Electronic Filing Committee (EFC)
- Payroll and Information Reporting Committee (PIRC)
- Sales and Use Tax Committee (SUTC)

The **Government Liaison Committee** addresses issues from both federal and state agencies. It helps resolve processing problems and reinforce information exchange. This allows the computerized tax processing industry to create high-quality products that can be efficiently processed through each revenue agency's system.

The **Electronic Filing Committee** works with the IRS and state taxing agencies to research and develop the electronic filing process. More returns are filed electronically every year, making it especially important for the data transfer between processor and receiver to be error-free and fast. The Electronic



Filing Committee works with the IRS and the states to establish standards for electronic filing.

The **Payroll and Information Reporting Committee** focuses on issues relating to the wage reporting sector (both unemployment and withholding) for electronic and paper- based filing. This Committee addresses issues relating to forms design, distribution, and approval; manual and automated return processing; electronic filing of wage reporting documents; and government compliance.

The **Sales & Use Tax Committee** offers an opportunity for dialogue between taxing authorities and member companies regarding issues that concern both parties. Discussions include forms design, distribution, and approval; electronic filing best practices; automated and manual return processing; and maximizing taxpayer compliance and accuracy.

1.4 Government Liaison Committee

The NACTP established the Government Liaison Committee (GLC) to promote communication and cooperation between taxing agencies and its member companies.

The purpose of the NACTP Government Liaison Committee is to serve in an advisory role, providing a forum for taxing agencies and member companies to discuss issues of mutual concern. Discussions include forms design, distribution and approval; manual and automated tax return processing; and government compliance.

The Government Liaison Committee wants to establish consistency of computerized substitute tax forms throughout the tax processing industry. NACTP members follow basic standards when redesigning federal and state tax forms to make them compatible with hardware and software restrictions.

Currently, the computerized tax processing industry generates as much as 76% of the total returns filed within some states. As the trend toward automated forms processing grows (including the use of scanning, barcoding, imaging and data capture), the need for information and expertise to be shared between the computerized tax processing industry and government taxing agencies increases. The need for consistent forms design also becomes more important.

The Government Liaison Committee actively works with many taxing agencies to assist in the smooth transition from manual to automated tax return processing technology. Areas of assistance include design and implementation of scannable forms, evaluation and implementation of barcode symbologies, and creation of specifications for automated forms processing.

Over half of the states have benefited from the services listed above through visits and/or conference calls with the Government Liaison Committee. When representatives from taxing agencies, automated processing companies, and the computerized tax processing industry work together, they can resolve issues and make recommendations for improvement. When implemented, these recommendations can help taxing agencies streamline their return processing, resulting in reduced costs.

The Government Liaison Committee works with taxing agencies to create products that are compatible with new government processing systems. The committee created this *Tax Form Design Standards* manual to assist in that effort.

In furtherance of the goals of this committee, the GLC assigns a GLC liaison from its member companies



to each state agency. The GLC-state liaison coordinates and facilitates the sharing of information, documents, concerns, and successes between the GLC and the state agency. Each year, the GLC gathers and compiles state feedback from all software company members and the GLC state liaison delivers this feedback to the state for review and discussion.

The rapport established between government agencies and the NACTP becomes more apparent with time. The GLC welcomes the opportunity to continue to develop strong working relationships between member companies and government agencies.



2. Forms Distribution and Communication

2.1 Draft and Final Forms

NACTP and government tax agencies share the common purpose of serving taxpayers. NACTP member want to provide the best possible service to their customers – both tax preparers and taxpayers – by providing them accurate tax programs and updated tax forms as early as possible in the tax filing season. Government tax agencies and NACTP member companies can help each other serve taxpayers by releasing advance draft and final copies of agency tax forms, specifications, and instructions to substitute forms developers.

Benefits of Releasing Draft Forms to NACTP Members

NACTP members provide additional proofreading and tax calculation review: NACTP members provide an additional independent review of the preliminary forms and instructions, reducing the agency's need for costly reprints and/or multiple re-electronic postings. An open, two-way dialogue about a form's merits or issues before the final is released benefits both parties.

NACTP members identify processing problems: NACTP members can identify potential processing problems for correction before the agency releases final forms. This provides a benefit to revenue agencies with scannable and barcode enabled forms. Early detection of format and layout design issues in the design process may be corrected to allow faster and more accurate processing. The revenue agency maintains the customer's (taxpayer) perception of high quality when errors are corrected before forms reach taxpayers' hands.

2.2 Electronic Delivery of Forms & Documents

Government agencies typically utilize several electronic methods for delivering forms and related software development documents to tax software companies:

- (1) Agency website posting, including FTP sites
- (2) State Exchange System (SES) on KiteWorks*
- (3) E-mail

Benefits of Web Posting

NACTP members prefer an internet website posting method, either on the agency website or on SES*. Distributing forms and related development documents via website postings provide transparency and a level playing field across the industry for developing tax software programs.

See Web Sites, for more recommendations on web site design.

NACTP requests that state agencies send an e-mail notification to software developers at the NACTP's email address, <u>nactp_list@nactp.org</u>, when the agency has posted documents to their web posting site.



Agencies that do not have access to a posting site can email their forms to this same group address.

*The FTA State Exchange System (SES) is a secure system for distribution of the National Standards and State Letters of Intent, MeF schemas and standards, with the option of also posting tax forms, and form specifications, from tax agencies to tax software companies. **State users contact support@taxadmin.org to gain access to these documents in the state agency's folders on SES.** In 2016, its launch year, some states opted to post forms and instructions for software companies to SES in addition to MeF documents.

More state agencies have since opted to post state tax forms and specifications to SES. However, state agencies may, at their option, continue to post substitute forms and related documents to their own agency websites. NACTP recommends consistency and accuracy in document posting, regardless of which posting method the state agency elects, to avoid confusion about latest document versions.

Preferred File Formats

NACTP prefers the PDF file format for forms, specifications, instructions, and publications.

- A PDF file generated directly from page layout or word processing software is smaller in size and easier to work with than a PDF file created from a scanned image. If the form uses non-standard fonts like dingbats or symbols, use the *Embed Fonts* option when creating the PDF file.
- If possible, keep file size under 1 MB. NACTP appreciates if tax agencies remove graphics and pictures from instruction booklets to reduce file size.

Further Recommendations

Release Schedules: Distributing a forms release schedule, even if subject to change, as well as draft forms and other documents used to develop tax software programs, through electronic delivery systems will reduce software company e-mail correspondence and telephone calls to taxing agencies regarding forms availability.

Form Design Documents & Specifications: Releasing gridded forms, overlays, and specifications at the same time as the form release helps developers submit their forms in an accurate and timely manner.

Revision Logs: Revision logs posted with date of posting on the electronic system regarding forms changes eliminates additional mailings and telephone calls.

2.3 E-mail Communication with NACTP Members

NACTP members prefer e-mail notification to our distribution list(s) for electronic delivery of information, especially for immediate notification of changes or general software company requests by tax agencies.

Agencies should continue to e-mail specific company forms approvals directly to the individual software company.

NACTP recommends that tax agencies announce forms postings and document updates through broadcast e-mail notification to software developers at <u>nactp_list@nactp.org</u>.



This table lists the various NACTP e-mail distribution lists and the NACTP groups that use them.

nactp_list@nactp.org	Entire NACTP membership list
nactp_board@nactp.org	NACTP Board members
nactp_glc@nactp.org	NACTP Government Liaison Committee membership
nactp_efc@nactp.org	NACTP Electronic Filing Committee membership
nactp_pirc@nactp.org	NACTP Payroll and Information Reporting Committee membership
nactp_sutc@nactp.org	NACTP Sales and Use Tax distribution list



3. Approval Process

The NACTP advocates that following these recommended guidelines will ensure that both the taxing agencies and the software industry experience a smooth review process and faster turnaround time for forms approvals.

3.1 Updating Information

It is essential that both software developers and revenue agencies keep each other informed about changes in contact personnel. Developers also need to know about changes in process, technology and tax law that affect forms.

Contact Information

To avoid delays in forms submissions and approvals, taxing agencies should inform developers of key contact changes. Updates can be sent by e-mail to <u>nactp_list@nactp.org</u> for distribution to NACTP members. Examples of critical information are:

- Primary forms and approval contact name(s), phone/fax number(s), and e-mail address(es).
- Secondary or back-up contact name(s), phone/fax number(s), and e-mail address(es).
- Special approval contact name(s) (2-D barcode, scannable forms, etc.), phone/fax number(s), and e-mail address(es).
- Complete e-mail address(es) and/or mailing address for submitting substitute forms.
- Any extended leave(s) of absence, such as vacation, maternity leave, training sessions, office moves, etc., for the approval contact(s).

Taxing agencies may update their contact information in the Resources, Agency Information section of the NACTP web site at http://www.nactp.org/resources/resources.htm. All of the information can be edited, but a password is required.

To update state contact information:

- Log on to <u>www.nactp.org.</u>
- Select Resources and then Agency Information
- You will need the current year's **User Name** and **Password** to proceed. Contact the NACTP Webmaster or your state's <u>Government Liaison Committee</u> contact to obtain the user name and password.
- Select the appropriate agency type from the list provided, i.e. Income Tax, Payroll Withholding, Sales and Use Tax, Information Returns (both 1099 and W-2) and Unemployment Insurance. When you have selected the agency type, select the Contacts link.
- Select your state from the list provided (you may have to scroll down the page or move through the pages to find your state). You can either edit a contact or select Add to enter a new contact.



• From the edit page, you will want to confirm the State ID and Type of Contact. Enter contact information for a Primary Contact and, if applicable, a Secondary Contact.

IMPORTANT! When the contact information has been updated, make sure to select Save at the bottom of the page.

General Information

The taxing agency should share form and tax-related information as it becomes available. This information can be directed by e-mail to the entire NACTP membership via <u>nactp_list@nactp.org</u>.

Examples of important information that may impact the submission of forms are:

- Forms release schedules and availability of preliminary and final forms
- Changes in web site address (URL) for forms or other tax-related information
- Announcements of preliminary and final form(s) postings as well as reposting of form(s)
- Changes in forms processing (may include changes in software vendor contracts or possible consideration of new scanning technology)
- Miscellaneous information regarding form changes, legislative changes, errors, etc.

Taxing agencies may also update form and tax-related information in the Resources, Agency Information, editable section of the NACTP web site, which can be found at http://www.nactp.org/index.php/resources/agency-information. A password is required. Contact the NACTP Webmaster or your state's Government Liaison Committee contact to obtain the user name and password.

3.2 Submitting Forms for Approval

Along with the submitted forms, developers should include a cover sheet or letter listing the submitted forms. Each form listed should have a corresponding area where the agency approval person can mark *Approved, Approved with Corrections,* or *Not Approved.* The cover letter should include a signature and date area and a comment section for use by the authorized agency approval person. The agency approval contact should indicate whether the approval is for the form, the 2-D barcode, the 1-D barcode, the scanline, or whatever else.

Numbers and Types of Submission Samples

Non-scannable forms or forms produced with no data:

• **One (1)** original printout of a blank form (without data). The taxing agency can make copies if more are needed.

Scannable forms:

• **One (1)** original printout of a blank form (without data). The taxing agency can make copies if more are needed.



• A maximum of **five (5)** test data samples.

The taxing agency should provide test data. If the taxing agency chooses to provide test data, then we recommend you use the ATS or BATs testing data. ATS and BATS testing data provides a good basis for forms approval test data. Be sure to include examples of all critical areas that need testing. If using ATS or BATS test data for approval samples, please enter the data onto a corresponding copy of the form

For estimated quarterly taxes, use 5 different taxpayers. 5 taxpayers each with 4 vouchers makes a total of 20 vouchers.

"Full field" sample (dummy data filling the maximum length of every field). This should be one of the five maximum samples required above. Dummy data should allow the use of:

99,999,999.99	XXXXXXXXXXXXXX
99999999.99	xxxxxxxxxxx

Pre-approved Vouchers

Government agencies should allow submission of test samples of newly developed vouchers or vouchers having significant revisions for pre-testing in the off-season. Pre-approval often reduces the turnaround time and the number of samples required for submission during the tax season, especially if the positioning of the captured data does not change between the preliminary and final releases.

NACTP recommends a maximum of **five (5)** test data samples for approval. If the taxing agency provides test data to use. Data using the ATS/BATS test is preferable, if possible.

3.3 Forms Approval Process

Taxing agencies should initially send scannable forms through their scanning equipment before they are manually reviewed for content. Manual review should include examining forms for layout, completeness and other key points. The entire form should be reviewed before it is returned to the developer for corrections. Proofreading word for word should not be necessary. Proof-reading forms is the responsibility of the tax software company.

Checking the accuracy of data calculations should not be part of the forms approval process. Forms approval should be limited to the appearance of the form and to how well it scans. Software companies often develop and submit forms for review before they have completed updating their calculation software. Calculation errors may be brought to a company's attention, but they should not delay the approval of the form. Data on the forms should be reviewed only for placement and formatting.

Forms should be reviewed and tested in the order that they are received, rather than held in batches containing each software developer's full set of submissions. The batching of full sets of forms should not be a requirement for submitting individual forms for approval.

Forms deemed Approved with Corrections should not require resubmission.

With the exception of scannable forms that require data-filled returns, forms deemed *Not Approved* may be resubmitted by fax or as an e-mail attachment in PDF format.



The approval of a form cannot be rescinded by the taxing agency. In situations where a serious error is detected after the form has been approved, the agency and developers are strongly encouraged to work together to resolve the situation. Especially later in the season, software developers are eager to get the approved forms out to their customers, and will do so within days of receiving approval.

3.4 Forms Approval Communication

Taxing agencies should send approval status to developers within **ten (10)** business days of receipt of forms.

Taxing agencies should email tax software companies acknowledging receipt of approval submission packages.

Developers prefer that approval status be communicated by these methods:

- E-mail preferred method
- Fax Notify recipient of incoming fax
- Phone Note that verbal approvals should be followed up by a signed hard copy of the approval, which can be e-mailed or faxed.

4. Compliance Agreements and Letters of Intent

4.1 National Standards Letter of Intent

Tax industry, state revenue agencies, and state partners have worked together to create a <u>National</u> <u>Standards Letter of Intent (LOI)</u>, which provides multi-state, industry wide standards regarding a tax software company's compliance with national security summit standards and requirements. The National LOI is available on the FTA's State Exchange System (SES) for all tax software providers to complete and submit. NACTP understands that states will not/may not allow a company to submit tax returns, (via e-file or paper), if a signed copy of the LOI has not been submitted to or approved by the jurisdiction.

- Tax software providers complete this LOI once per season on behalf of their company for each product type offered.
- Software providers also need to complete a separate state-specific LOI for each jurisdiction in which the company intends to offer its product or service.
- Many jurisdictions will reference each company's response to the national LOI as part of their approval process.
- A jurisdiction may not accept a company's state LOI if the national LOI is not completed and submitted prior to that jurisdiction's specific LOI due date.
- Software providers will provide contacts for their company, include security, leads reporting and feedback, schema access, and forms access, on the list of authorized users for FTA SES. State



jurisdictions will use that list to grant access or communicate with each company unless the state otherwise requests contact information on their unique state LOI.

4.2 State Letter of Intent

Each state revenue agency may elect to provide software providers with a state specific LOI for completion and approval before a software provider may submit forms for approval or receive e-file certification from the agency. This LOI is in addition to the National LOI. The state may combine substitute forms and MeF LOIs, or provide separate LOIs for each program type.

The state LOI will typically include the following information:

- Software company identifying information (company name, address, NACTP ID, state vendor ID, etc).
- Contact information for both the state agency and the software provider relative to the type of LOI (substitute forms and/or MeF contacts).
- Type of software programs provided or developed
- List of forms and schedules supported (reproduced and/or e-filed)
- Software limitations
- State-specific compliance clauses
- State-specific questions
- State-specific posting and communication methods
- Signature of authorized software company representative

NACTP Recommended Compliance Standards

Release of Unapproved Forms

NACTP requests that revenue agencies do not include language that directs tax software providers to wait until all forms are approved before selling, releasing, licensing, or distributing in their products. Delaying product releases places a burden on software developers, as well as their customers and clients. The customers and clients are not able to enter data and preview results in anticipation of the release of the approved forms, and they swamp company support centers with inquiries about projected date(s) for the software release.

Instead, NACTP recommends the following language in compliance agreements:

If unapproved forms are released in software packages, tax software providers should place a prominent visual indicator with appropriate text on the form(s) alerting the end user that the form cannot be filed. (such as a "not approved for filing" flag or watermark)

Software Supported Forms List

If a revenue agency requires software developers to submit a list of supported forms, the agency should allow developers to add forms after the list has been submitted. Software developers need to understand that agencies may have a cut-off date for the testing and approval of certain types of forms, but they would like to see some flexibility around this requirement. Agencies



could add a phrase like "to the best of the developer's knowledge" to the list. NACTP member companies also request the ability to add non-scannable forms at any time.

Software Logic & Calculations

Revenue agencies should not approve the software logic or calculations as part of the form approval process. NACTP recommends the following language in compliance agreements:

The agency does not review or approve the logic of specific software programs, nor does the agency confirm the calculations on the forms produced by these programs. The accuracy of the program remains the responsibility of the software developer, distributor, or user.

Error Reporting

Revenue agencies should not post computational errors in software packages to their website.

Software developers will make every reasonable effort to identify calculation or processing issues, notify the revenue agency, and test and update their products to correct computational errors.

Proprietary Content & Software Programs

- Revenue agencies should not require tax software companies to submit elements of proprietary content like user interface screens, interview text, diagnostic messages as part of the approval process.
- Revenue agencies should not require tax software companies to provide copies of their software. Developers, at their discretion, can provide agencies with courtesy/educational copies of their software as it becomes available.

Noncompliance Clause

To ensure software developers' compliance with the agency's requirements for forms design and approval, NACTP recommends the following language in compliance agreements:

Willful noncompliance with the agency's requirements could result in the rescinding of a software developer's forms approval.

4.3 LOI Contacts

For questions on the National LOI content, contact Auston Holmes at <u>Auston.holmes@tax.idaho.gov</u> For access to the documents in SES or have problems with SES log-in, contact <u>support@taxadmin.org</u>



5. Tax Form Design Standards

Working with revenue agencies and scanning vendors, tax software companies have developed design standards that make their substitute forms compatible with as many processing and printing systems as possible. Revenue agencies who want to automate tax return data capture should refer to these standards when designing their scannable forms. Complying with standards has benefits to revenue agencies - fewer forms will be rejected from the processing stream, thus reducing manual processing costs.

5.1 Printing Technology

Desktop Printing

Laser and ink jet printing are the desktop printing methods most commonly used by the computerized tax processing industry to print substitute forms. Laser printers are typically limited to black ink. Ink jet printing provides some color capability, but print quality varies with printer models.

Desktop printers have less control over the image position on the page than do offset printers. This can be affected by many variables, such as:

- The print driver software version
- How the paper feeds into the printer
- Whether the paper feeder is on the top, bottom or side of the printer
- How high the stack of paper is in the paper feeder
- The type of paper being used

Margins

Desktop printers have stringent mechanical margin and print driver limits, usually **requiring a half-inch margin on all sides of the page**.

To avoid the limitations of current desktop printers, developers must design forms with half-inch margins on all four sides. This has proven to work consistently on desktop printers, and it produces the best results for scannable forms.

Any forms with text or variable data in the half-inch margin risk having that information cut off when the form is printed. It benefits the revenue agency to develop forms with a half-inch margin, because the agency will no longer run the risk of receiving forms with vital tax information missing when the user's printer cannot print in the half-inch area. The NACTP strongly urges revenue agencies to design original forms with a half-inch margin. See "<u>Text Design and Form Layout</u>" in this section for further discussion of this topic.

Preferred Fonts

Data should be printed on the forms in the **Courier or Courier New** font. We encourage the use of Courier/Courier New because they are standard fonts resident in most desktop printers. Thus, they are readily available to practitioners and taxpayers, and will meet the criteria for easy recognition with imaging



equipment.

The NACTP strongly urges revenue agencies to design forms that do not use OCR-B or other specialty fonts. OCR-B are not standard fonts. The requirement for a non-system or non-standard font often results in the substitution of other fonts. This is something that is controlled by the user's computer operating system and printer settings. See "<u>Variable Data Fonts</u>" further on in this section for more discussion of this topic.

5.2 Design Standards

This section describes the basic design standards for these categories:

- Paper and ink
- Form Layout and the 6x10 grid
- Fonts and text styles
- Variable printed data
- Tax form instructional text
- Vouchers and coupons

Paper & Ink

Paper Size

8-1/2 inches by 11 inches is the most commonly used paper size in the U.S. today. Virtually all desktop printers support it. Software developers need to have substitute forms designed on 8-1/2 by 11-inch paper.

Single-sided Printing

Many desktop printers can only print single-sided documents. Consequently, software developers cannot force their customers to print double-sided documents.

Paper Weight

The minimum paper weight for scannable forms is 20-pound bond. This is the most common paper weight for desktop printers and photocopy machines. Printers and copiers have much less trouble with this weight than with lighter weight papers. To ensure a good read rate, avoid using recycled paper.

White Paper

White paper provides a high degree of legibility and contrast. Paper manufacturers supply white paper in a wide variety of sizes and weights. Specifying colored paper for forms requires software developers to program print/paper-change pauses into the tax software. This extra step reduces the user's productivity.

Black Ink or Toner

Black ink provides a high degree of legibility, is easy to photocopy and readily available. Black is the most common toner color for desktop printers.



Page Orientation

Page orientation can be vertical (portrait) or horizontal (landscape) as illustrated.

- A portrait (vertical orientation) form measures 8-1/2 inches wide by 11 inches high.
- A landscape (horizontal orientation) form measures 11 inches wide by 8-1/2 inches high.

Vertical/ Portrait	Horizontal/Landscape
	·

Vertical/Portrait Page Orientation

An 8-1/2x11 inch standard sheet of paper has 66 lines, based on 6 lines per vertical inch. Allowing for a half inch margin on the top and bottom edges of the page will yield an actual print area of 60 lines, starting with line 4 and ending with line 63.

An 8-1/2x11 inch standard sheet of paper has 85 columns, based on 10 columns per horizontal inch. Allowing for a half inch margin on each side of the page will yield an actual print area of 75 columns, starting with column 6 and ending with column 80.

Vertical form orientation should be created with these grid coordinates:

- Vertical- starting at row 4, ending at row 63
- Horizontal- starting at column 6 ending at column 80

Vertical printing area:

- First printable line: Row 4 for first page and row 5 for subsequent pages
- Last printable line: Row 63

Horizontal/Landscape Page Orientation

Landscape form orientation should be created with these grid coordinates:

- Horizontal- starting at column 6, ending at column 105
- Vertical- starting at row 4, ending at row 47

Horizontal printing area:

- First printable line: Column 6
- Last printable line: Column 80

6x10 Character Grid

Developers often use a 6x10 character grid to lay out substitute forms. All forms developers can support this layout grid, and some cannot support anything else.

The 6x10 dimensions refer to standard 12-point monospaced font spacing with 6 rows per vertical inch (pica spacing) and 10 characters or columns per horizontal inch (10-pitch spacing).





A 6x10 grid with sample of 12 point 10 pitch Courier/Courier New

The rows and columns get numbered across and down starting at the upper left corner.

2017 Form F	21-10	40NR									
Nonresident Indi	vidua	Income	Tax F	Return			1710	004999901	01		
Your social security number		Spouse	e's soci	al security num	ber						
999-99-9999		999	-99-	-99999			Res	served for	2D ba	ircode	
Your first name	M	Last name				Suffix					
XXXXXXXXXXXXXXX	Х	XXXXX	XXXX	XXXXXX	Þ	XXX		x: 5.00) in		
Spouse's name	MI	Last name			5	Suffix		v 13	in		
XXXXXXXXXXXXXXX	Х	XXXXX	XXXX	XXXXXX	2	XXX					
Address								VV. 2. (9 m		
XXXXXXXXXXXXXXXXX	XXXX	XXXXXX	XXXX	XXXXXXXX	XXX			n:1.51	η		
City, town or post office		Sta	ate	ZIP code							
XXXXXXXXXXXXXXXXX	XXXX	X X	X	99999							
City or town of legal residence		Check ead	h box	Primary		Spouse		New		Amende	d
	XXXX	that applie	s. Other	deceased?	X	deceased	2 ×	address?	×	Return?	X

Upper half of a 6x10 grid showing half inch margins and numbered rows and columns.

To easily identify a multiple page return, taxpayer identifiers such as name, social security number and/or identifying number usually print at the top of page 2 and all subsequent pages. Please leave row 4, the top printable row, blank on all pages after page 1 when designing a substitute tax form so that this information can print there.

A form designer can use the numbered columns and rows to specify the exact position of form elements like fields, labels, barcodes, line text, form numbers, registration marks, key entry indicators, etc. Some revenue agencies even use this grid to prepare acetate overlays for developers to check their substitute form layouts. This can be a very helpful tool as long as the layouts match the specifications.

When using the grid to design a form, it's important to position all of the forms elements exactly on the grid. Positioning data elements so that they straddle grid rows and columns is difficult to reproduce by software companies.





Good use of the 6x10 grid to position data elements on a form. Each field character, line number and reference mark has a clearly defined row/column position.

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Awkward use of the 6x10 grid to position data elements on a form. Field characters, line references, labels, and graphics straddle the numbered rows and columns on the grid. This spacing is difficult to impossible for tax software companies to duplicate

Many desktop printers have minimum margins that cannot be changed. They cannot print all 85 characters across the page horizontally or all 66 rows down the page vertically.

Designing a form with a 1/2-inch margin on all sides addresses most printer-related issues. See the discussion on <u>half-inch margins</u> in this section under <u>"Advantages and Limitations</u> <u>of Desktop Printing"</u> for more information on this topic.

Fonts & Text Styles

Recommended Fonts										
Static Text Fonts	Variable Data Fonts									
Arial	Courier									
Helvetica	Courier New									
	0CR-A									

Static Text Fonts

While most software developers use commonly available desktop publishing fonts in their substitute forms, some companies still use software that has a limited range of font sizes and styles. Limiting fonts to specific styles in even sizes between 6 and 14-point will ensure that all members of the computerized tax processing industry can meet government requirements.



Some revenue agencies are requesting that **static text** match their form exactly including the font style and size. This is referred to as "finger print" or "mirror-image" matching of the static text. Since many software developers are limited to their font sizes and styles, it is sometimes difficult to match a revenue agency form exactly. If the revenue agency requires the software developer to match the **static text** then we recommend using the fonts **Arial** or **Helvetica**.

Static Text Tont Style	Lixample
Arial	~!@#\$%&*()+,- 0123456789:;<>"/
	ABCDEFGHIJKLMNOPQRSTUVWXYZ
	[\]^_{}'abcdefghijklmnopqrstuvwxyz
Helvetica	~!@#\$%&*()+,- 0123456789:;<>"/
	ABCDEFGHIJKLMNOPQRSTUVWXYZ
	[\]^_{}'abcdefghijklmnopqrstuvwxyz

Static Text Font Style Example

Variable Data Fonts

Scannable forms generally use a monospaced font to display and print variable data fields. A monospaced font is one where the horizontal space allocated to each character is exactly the same. An "M" and a "W" have the same width as a "," or an "i". **Courier** or **Courier** New and **OCR-A** are the monospaced fonts most easily read by scanning equipment and most often specified for variable data fields.

The default monospaced font found in most desktop printers is either **Courier** or **Courier** New. We encourage the use of Courier or Courier New because it is readily available to practitioners and taxpayers, and will meet the criteria for easy recognition with imaging equipment.

If the font is not available on the user's computer system, the printer will default to printing in another font, usually Courier or Courier New. If the tax software user has another font-rich application (like a word- processing or desktop publishing application) running at the time that s/he prints the return, the fonts in the other application could overwrite any non-standard font required by the tax software. For these reasons, NACTP prefer that tax agencies use Courier or Courier New rather than OCR-A when implementing automated processing.

Substitute form developers do not support the **OCR-B** font. Taxing agencies should not specify use of OCR-B because most tax software customers and tax practitioners do not have this font available in their laser printers. When a specialty font like OCR-B is required but not available, font substitutions are likely to happen when the form is printed. Some revenue agencies, who already had established processing systems that require OCR-B, have upgraded their systems so that OCR-B is not required. As a result, the read rates on their forms have greatly improved and reduced the need for manually processing their forms.

Variable Data Font Style Example

Courier or	Courier New	~!@#\$%&*()+,- 0123456789:;<>"/

	ABCDEFGHIJKLMNOPQRSTUVWXYZ
	[\]^_{}'abcdefghijklmnopqrstuvwxyz
OCR-A	~!@#\$%&*()+ ₁ - Ol23456789:i<>"/
	ABCDEFGHIJKLMNOPQRSTUVWXYZ
	[[\]∧_{}'abcdefghijklmnopqrstuvwxyz

Special Characters

The figure below shows the symbols available to the computerized return processing industry. This set of characters is available on most printers. Characters that are not listed here should be avoided. These are the most-preferred symbols for use on substitute tax forms and can be safely used for marking key data fields or as form registration marks.



Check Box Size

A check box must be a minimum of 1/10-inch wide by 1/6-inch high in order to enclose a 12-point Courier/Courier New "**X**" or any other single Courier/Courier New character.

12 pt Courier New in minimum sized box	Х
12 pt Courier New in undersized box	X

Shading or Screens in Text Areas

Avoid requiring shaded areas or screens printed over text areas on substitute tax forms. It is difficult to maintain consistent images using shades and screens because of the density differences between desktop printers. Shading can also interfere with the read rate on scannable forms.

Reversed Letters and Numbers

Avoid requiring reversed letters and numbers (white characters on a black background) on substitute forms. Some tax software providers are unable to reproduce reversed letters and\or numbers.

Rotated Text

Although rotated text is often used on official forms, avoid requiring it on computerized substitute forms. Not all forms layout packages that developers use support it.

Unique Logos and State Seals

Avoid requiring unique graphics such as birds, animals, faces, and state seals/logos on substitute forms. Since these are not supported in standard fonts, they must be inserted as bitmap, .jpg, .gif, and .png files, which drastically increase the file size, and thus slow printing.

Field Delimiters

Data areas for identifying negative numbers, dates, social security numbers and telephone numbers should be free from preprinted dashes, slashes and parentheses. Those delimiters are part of the variable data generated by the software application.

Variable Data Formats



Rounding to Nearest Dollar

The preferred format for dollar amounts is the whole dollar amount, including commas, which may or may not be followed by a decimal point. Decimal points are standard for some software companies, but not all. Using cents fields requires two additional spaces in the field length. This leaves less room for text. Developers often must abbreviate text on the line to gain the room for the extra cents characters.

Dollar Amount Field Size

Individual returns: 12 characters, (based on 10 characters per inch) Business returns: 15 characters, (based on 10 characters per inch)

This would allow for a maximum dollar total of:

- Individual returns: 999,999,999.
- Business returns: 99,999,999,999.

Twelve characters (including commas and a decimal point) are sufficient for most individual tax returns. The larger dollar amounts used in business returns usually require data field lengths of 15 characters. The use of cents would require two additional spaces, leaving less room for text.

Data Field Delimiters

Data such as social security numbers, dates, negative values and telephone numbers should display as follows:

Data Type	Example	Delimiter
Social Security Numbers	XXX-XX-XXXX	"-" Hyphen
Dates	MM/DD/YYYY	"/" Slash
	MM/DD/YY	
	or	
	MM-DD-YYYY	"-" Dash
	MM-DD-YY	
	or	
	MMDDYY	[no spaces, no special
	MMDDYYYY	characters]
	or	
	MM DD YY	[with spaces, no special
	MM DD YYYY	
Negative Values	-999,999,999.	"-" Floating minus sign directly to the left of the first number with no extra space between the minus and the number
Telephone Numbers	XXX-XXX-XXXX	"-" Hyphen
	(XXX)XXX-XXXX	"()" Parentheses and



XXX XXX XXXX	Hyphen [no spaces, no special
	[no spaces, no special characters]

Taxpayer Identification Data Standards

There are several data types, usually identifying the taxpayer(s) and/or return preparer, that are common to all tax forms. Listed below are descriptions of each data type and the minimum number of print positions required for each.

Data Type	Minimum Number of Print Positions Required
Taxpayer's Name	54 total
First name (if separate field)	16
Middle initial (if separate field)	1
Last name (if separate field)	32
Suffix (if separate field)	3
Spouse's Name	54 total
First name (if separate field)	16
Middle initial (if separate field)	1
Last name (if separate field)	32
Suffix (if separate field	3
Child or Dependent Name	52 total
First Name	16
MI (if separate field)	1
Last Name	32
Suffix (if separate field)	3
In Care Of	35
U.S. Address	72 total
Street	35
City (if separate field)	22
State (if separate field)	2
ZIP + 4 (if separate field)	10
Foreign Address	120 total
Street Address	35
City	50
Province/state	17
Country code	2
Postal code	16
County	25
School District	25



Data Type	Minimum Number of Print Positions Required
Social Security Numbers	
Taxpayer SSN	11
Spouse SSN	11
Dependent/Child SSN	11
Occupation	
Taxpayer occupation	20
Spouse occupation	20
Telephone number	12 (including area code)

Preparer Information Data Standards

Allow a minimum of 3 lines for the preparer or firm name, address, city, state, and ZIP code. Use the following field lengths for the preparer information:

Data Type	Minimum Number of Print Positions Required				
Firm Name	75				
Preparer Name?	35				
U.S. Firm Address	72 total				
Street	35				
City (if separate field)	22				
State (if separate field)	2				
ZIP + 4(if separate field)	10				
Foreign Firm Address	see Foreign Address above				
FEIN	10				
PTIN /STIN	9 (alpha-numeric)				



Tax Form Instructional Text

Substitute forms developers often modify the instructional text included on official government forms. Some text is usually omitted. Generally, substitute forms do not include instructions and tables that get coded into the software program. Often, the substitute form will exclude instructions referring the taxpayer or preparer to a specific page in a booklet for explanation. Additionally, the phrases, "on page 2" or "on the next page" are often used in place of "on the back."

Instructions stating which supporting forms must be attached and instructions referring to the transfer of dollar amounts from line to line or from page to page are always included.

Vouchers & Coupons

Vouchers and coupons are small forms that do not take up the whole sheet of paper. These forms are typically fed into a scanner that reads the pertinent information. Almost every government revenue agency has a voucher, but no two vouchers are exactly alike.

Making computer-generated vouchers that comply with the many different scanning system requirements is a challenge for substitute forms developers. Revenue agencies can make that task easier if they follow these NACTP standards for size, margins and fonts.

Voucher Size

3-2/3 Inches to 5-1/2 Inches Maximum Height

Taxpayers are often required to cut their vouchers to size before submitting them to the revenue agency. The cut edges of vouchers are rarely straight or perfectly positioned. If a cut edge is fed into the scanner, it can cause misreads and then require manual processing. Software developers try to have users make as few cuts as possible. Positioning single vouchers at the bottom of the page will avoid having two horizontal "cut here" lines (top and bottom of voucher). It also preserves a clean long edge to feed into the scanner. Forms taller than 5-1/2 inches should be designed as full-page forms to avoid any cut lines on the page and should only have one voucher per page.

8-1/2 Inches Width

Vouchers that are not 8 1/2 inches wide are more difficult to reproduce because they require a vertical "cut here" line as well as a horizontal one.

1/2 Inch Margins

Substitute forms developers discourage having more than one voucher on one page. If more than one voucher is printed on an 8-1/2 x 11-inch page, a 1/2-inch margin around **each** voucher must be maintained. This means that there would be at least a one-inch space between the "live" area of two vouchers that are stacked on the same page. See the discussion on <u>half-inch margins</u> in this section under <u>"Advantages and Limitations of Desktop Printing"</u> for more discussion of this topic.

Single-Sided Printing

The NACTP strongly discourages double sided or two-page vouchers. When there is more information than can be printed on a single-sided voucher, the revenue agency should redesign the voucher as a full-page form.

Scan Line or Check Digit Line in Courier/Courier New



Variable data fields print best using Courier, Courier New, or OCR-A (monospaced fonts). The default monospace font found in most laser printers is either Courier or Courier New. These variable data fields should use size 12-point, 10 pitch characters. See "<u>Variable Data Fonts</u>" in this section for more discussion of this topic.

Sample tax form (voucher)



6. Image Processing and Scannable Forms

6.1 Introduction

Every taxing agency tries to find the most efficient and cost-effective way to process tax returns. Ultimately, electronic filing is the quickest and most accurate method. As taxing agencies move taxpayers toward electronic filing, many agencies employ automated image processing systems as an interim way to improve their processing rate of paper returns. These systems scan, or mechanically read, paper returns to capture and electronically store pertinent tax data.

Over the past few years, the number of taxing agencies implementing some type of image processing automation to read returns has grown dramatically. The percentage of returns that are being prepared by the computerized tax processing industry increases annually.

In some states, it is 90%. This number stresses the urgency of early involvement between taxing agencies and the NACTP when implementing automated processing. This timely joint \involvement has proven to be very cost-effective by identifying and resolving issues prior to implementation.

The NACTP Government Liaison Committee actively participates in the evolution of automated forms processing technologies by sharing its expertise and unique knowledge of software and desktop printing capabilities with taxing agencies and automated processing companies.

Many avenues are available for obtaining and exchanging information about automated image processing with the NACTP. These include:

- On-site visits
- Informational documents, including this standards manual
- The NACTP web site (<u>http://www.nactp.org</u>/)
- Referrals from other taxing agencies
- Professional meetings
- Conference calls

6.2 Designing Forms for Image Processing Systems

Currently, there are seven different ways to organize forms for image processing systems. In order of NACTP preference, they include:

- One-dimensional bar codes & QR codes
- Document identification codes
- <u>Scanbands</u>



- <u>Two-dimensional bar codes</u>
- Absolute positioning
- <u>Scanlines</u>
- Answer sheets

The following section explains each method, including definitions, applications, advantages and disadvantages.

One-dimensional bar codes and document identification codes are the methods most preferred by the NACTP, followed by scanbands. All NACTP members support these methods.

Two-dimensional bar codes provide greater advantages to government agencies than to software developers. Since not all NACTP companies currently support this technology, it should not be mandated.

One-Dimensional (1-D) Barcodes & QR Codes

One-dimensional (1-D) Barcode

A one-dimensional barcode is an orderly array of black bars (or lines) and white spaces that have a defined pattern, and can be read by a scanner or a scanning wand. The bars and spaces have varying widths and distances apart from one another.

In a one-dimensional bar code, the relationship between the width of a wide bar and the width of a narrow bar is called the "wide to narrow ratio". In a barcode with a wide to narrow ratio of 3:1, the wide bars in the bar code are three times as the width of the narrow bars.

The wide to narrow ratio is more important than the total width of the bar code because it determines the readability of the bar code by scanning equipment.

Quick Reference (QR) Code

A quick reference or QR code is an array of black and white squares. Similar to the 1-D barcodes, QR codes are machine readable and scanning equipment can quickly decode the content. QR codes are typically smaller than either version of the 1-D barcodes and require less room on tax forms. QR codes can be as small as $\frac{1}{2}$ square; a QR code, however, requires quiet zone (white space) around all sides.

Businesses wishing to automate data entry or product identification, or to monitor process flow, find the use of bar codes to be a quick and easy method to capture accurate information. Bar codes also work well in high-volume processing. Bar codes on government forms are used to identify forms to be imaged. Typical information contained in bar codes currently being used by taxing agencies includes form number, tax year, page identifier and vendor number.

When selecting the type of bar code to use, keep in mind both present and future character requirements. Generally, bar codes that accommodate the use of alpha characters require more elements per character. If space on the form is limited, it is easier to implement a numeric-only bar code scheme. When designing forms, we recommend that the orientation and location of the bar code be identical from form to form and page to page.

Although there are many bar code types, the two types of 1-D bar codes that the NACTP recommends



and that meet the current needs of taxing agencies are the Interleaved 2 of 5 and Code 39 bar codes.

- An Interleaved 2 of 5 bar code represents numeric characters only.
- The Code 39 bar code represents numeric characters, uppercase alpha characters and seven special characters. Because it is more compact in design, the Interleaved 2 of 5 bar code is preferred, unless alpha characters are also required.







17120124 Interleaved 2 of 5 17120124 Code 39

17120124 QR Code

In the preceding bar code examples, four pieces of information are encoded in eight numerics, as follows:

Barcode element	Value
2-Digit year	17
2-Digit form number	12
2-Digit page number	01
2-Digit vendor code	24

The New York Department of Taxation and Finance has implemented an automated forms process that uses a bar code scheme for identification, sorting, and forms removal. Currently, New York uses the Interleaved 2 of 5 bar code to identify personal income tax forms during processing.

The Connecticut Department of Revenue Services (DRS), Oklahoma Tax Commission, and Hawaii Department of Revenue have implemented the use of QR codes.

Computer-generated forms do not support dynamic data (taxpayer-specific information) in 1-D bar codes and QR codes. Dynamic data changes from return to return. Putting taxpayer-specific information in the one-dimensional bar code or QR code would not be possible for most developers because the bar code itself is part of the static image, not part of the calculations or software engine. All necessary information, including the taxpayer's social security number, can be captured on the form itself if a one-dimensional barcode or QR code is present. However, two-dimensional bar codes can contain this type of dynamic data.

Advantages of 1-D Bar Codes & QR Codes

- Any form that the taxing agency wishes to image and/or data capture can be easily added.
- Software providers do not need to position data on exact row and column coordinates, which eases the approval process.
- Taxpayers are provided with a form that is similar to the form that has been provided to them in the past, with the only change being the addition of a bar code.



Disadvantages of One-Dimensional Bar Codes & QR Codes

- Taxing agencies must program templates for the individual company's forms every year.
- Software and printers need to be capable of reliably producing bar codes. If the bar code is too compressed, some ink jet printers may not produce bar codes that can be read accurately.

Document Identification (ID) Codes

A document identification code, or "doc ID," is a string of characters placed on a document to identify a form for the capture of information on that form. These characters can be numbers or letters. California currently employs such identifiers on their income tax forms. Document identification codes are often used in combination with other scanning design methods, such as scanbands. Like the one-dimensional bar code, a document identification code is an easy method for capturing accurate data. The document identification code can contain information such as the form type, form year, page number, vendor identification and the form's source. When the machine reads the document identification code, it is telling the machine where to look for other data such as taxpayer identification and amount fields.

Placement of the document identification code on the form should be in the same area on all forms. The characters should be placed horizontally. The characters can be either alpha or numeric, or a combination of both. The preferred font for document ID codes is Courier 12 point 10 pitch, as in the following example.

Sample Document ID: 3101174 or 3102174

Character position	Element	Value Sample ID 1	Value Sample ID 2
1-3	Doc ID Number	310	310
4	Side/page number (1-digit number; exclude text	1	2
5-6	Tax year (2 digits, i.e. "16")	17	17
7	Source code "4" = substitute form "6" = scannable form	4	4

This sample 7 digit document ID has encoded five pieces of information, as follows:

The NACTP strongly recommends standardizing document identification codes across all forms of a particular type, e.g., corporate forms and personal income tax forms. The NACTP also strongly encourages agencies to assign document ID codes before forms are released to software developers.

Advantages of Document ID Codes

- The document identification code takes up less space on a form than a bar code.
- If needed, the document identification code can be read visually.
- New forms can be easily added to the system.

- Taxpayers are provided with an easily read form.
- Document identification numbers can be printed by a wide variety of printers.

Disadvantages of Document ID Codes

- The document identification code requires precise row/column positioning. Absolute row and column data positioning cannot always be maintained due to variations across printers.
- In order to get the most accurate read, a template must be programmed for each software company.

Scanbands

A scanband is a consolidated area on a document that contains tax return information to be processed by a scanner. This area is the "scan data only" portion of a form. This type of form requires data to be placed in absolute, pre-defined row and column positions measured in 1/10-inch horizontal and 1/6-inch vertical increments. Examples of substitute state tax forms with scanbands are the personal income tax forms California Form 540 and North Carolina D-400. Vermont also has a scanband on the corporate form CO-411.

												-
			FO	R COI	IPUTERI	ZED	USE ONL	Y				
FID	123456789	FYB	201	601(01	F	YE	201612	31	NAICS	12	3456
PRINC	IPAL ENTITY UP	? TO 36	CHAI	RAC	FERS		APC	Ν	AMD	N	EXT	Y
LINE	1 FOR MAILING	ADDRESS	UP	то	36X		COM	Ν	CON	Y	FIN	N
LINE	2 FOR MAILING	ADDRESS	UP	то	36X			FED	1120	F	DSC	Y
CITYO	RTOWN TO TWENT	יע צי	2	051	11122	41		WEG	999		VNX	999
CANAD	AOROTHERCOUNTE	XYUPTO32	2xxx	XXX		S	MFM	Y	NOVT	N	HCA	N
	9	Scanband	using	g 12-	point (Cour	rier (sc	aled dow	n in size)		

Several taxing agencies currently use scanbands on their forms. Some states, such as Louisiana and Texas, use a scanband along with an identifier. This identifier may be a bar code or a document ID code printed in a defined location in a Courier font. The California Franchise Tax Board (FTB) uses a scanband with a patch and a document identification line. See <u>"Document Identification (ID) Codes"</u> and "<u>Patch</u>" also in this section.

When using a scanband, the remainder of the form is in the "standard" format. Although the entire return may be imaged for storage, usually only two specific areas are defined for data capture. Those two areas are the entity or label area and the scanband, which is the area where the software gathers and prints information calculated on other lines of the form.

States using scanband forms have developed guidelines that include specific data locations, as well as guidelines for standardizing abbreviations, capitalization, using dashes in Social Security Number fields and negative signs ("-") preceding negative dollar amounts. Knowing the exact locations for data placement simplifies the setup of the imaging equipment for the taxing agency.



Advantages of Scanbands

- The taxing agency has less initial setup cost and little annual maintenance.
- Taxpayers have readily accepted the use of a scanband followed by a "standard" form.

Disadvantages of Scanbands

- Absolute row and column data positioning cannot always be maintained due to variations across printers.
- Both the form and data placement need to be reviewed in the approval process. Scanbands that use a patch rather than a document identifier have additional disadvantages:
- Form types must be pre-sorted because there is no way to distinguish one return type from another.
- Additional forms to be data captured are difficult to include because there is no way to identify the different forms

Patch

The patch is a pattern of horizontal lines of varying density and space that the scanner uses to identify the next set of documents. Unlike a bar code or other document identifier, the patch does not contain any information for the scanner other than indicating the beginning of another return. Utah uses a patch at the top of its resident personal income tax forms, TC-20 and TC-40.

Patch		

Two-Dimensional (2-D) Bar Codes

The standard type of two-dimensional or 2-D bar code used in the tax industry is called PDF417, or Portable Data File 417. It is a two-dimensional stacked bar code symbology that can encode up to 1800 printable ASCII characters. It performs error correction by making calculations, if necessary, to reconstruct undecoded or corrupted portions of the symbol.

2-D barcode

Error correction is a primary feature of PDF417. By inserting code words into the symbol, it is possible to compensate for damaged or unreadable bar codes. When a PDF417 bar code is printed, the user specifies a security level in the range of 0 to 8. A high security level will generate a large barcode, but will also increase the likelihood of recovering information from a damaged bar code. The error correction level for the 2-D bar code is set at **4** to meet NACTP standards.

Two-dimensional bar codes can store up to 1800 printable ASCII characters. However, for technical reasons, the expected number of characters for tax applications is approximately 1200 with data from



the entire tax return, not just the form on which the bar code is positioned.

The use of 2-D bar coding and scanning to automate the capture of tax return data has emerged as a useful alternative filing method. To successfully implement this technology in return processing, government agencies need the cooperation of tax software companies that must incorporate 2-D output capability in the products they provide to taxpayers and practitioners. Thus, government taxing agencies and software developers have a mutual interest in ensuring that 2-D technology is implemented In as consistent a manner across agencies as possible, and with the greatest degree of "fit" with current tax administration and business processing streams.

Since 1999, the Federation of Tax Administrators (FTA) and the NACTP have convened regular working meetings, conference calls, and information sessions to create and maintain consistent and guidance on the implementation of 2-D barcode processing.

For more information, see the 2-D barcode standards and guidance documents available on both the NACTP and FTA websites These documents provide information on form design, barcode technical matters, file format, testing and approval, as well as barcode specifications and version control.

NACTP: <u>http://www.nactp.org/images/stories/GLC/2-D%20Barcode%20Standards%20Rev2-d09.pdf</u> FTA: <u>https://www.taxadmin.org/technology-standards</u>

Advantages of 2-D Barcodes

- A large amount of data can be contained within a two-dimensional barcode, far more than within a one-dimensional bar code.
- Up to 50% of the bar code can be destroyed (torn, gotten wet, etc.) and, depending on the level of error correction, the barcode will still be readable.
- The read rate of a 2-D bar code is either 0% or 100%. This eliminates the need for data verification.

Disadvantages of 2-D Barcodes

- Not all software developers are able to produce the two-dimensional bar code.
- Special scanners are required to read two-dimensional bar codes.
- Usually, forms must be re-designed to gain the space for a two-dimensional bar code.
- Software and printers need to be capable of reliably producing bar codes. If the bar code is too compressed, some printers may not produce bar codes that can be read accurately.
 - Taxpayers and tax preparers handwrite an update on the printed tax form. This change is not captured in the 2-D barcode.
 - The development of 2-D barcode reduces software company bandwidth for other projects, enhancements, etc.
 - o Additional approval requirements and testing.

Drop-out Ink and Absolute Positioning of Data Fields

Drop-out ink is another approach to developing scannable forms for those portions of the form that are not required to be imaged or data captured. Drop-out ink is available in many colors, but is normally red or blue. Drop-out ink is not readable by scanners. Therefore, nonessential information printed in drop-



out ink (such as text) is eliminated, thus reducing the file size and storage requirements.

Drop-out ink is often used for the official government forms. Software developers' computer- generated forms cannot duplicate the use of drop-out ink because their customers generally use laser printers, which print in black ink only. The Massachusetts Resident Income Tax Form is an example of an official government form that uses drop-out ink.



Alternate Drop-Out Ink Form

States that incorporate drop-out ink for the "official" form also design an alternate version for use by the computerized tax processing industry.

If an alternate design (such as a scanband) is not provided, NACTP recommends that agencies provide software developers with a copy of the form on a standard 6x10 grid showing exact starting and ending coordinates of each field on the form. These grids enable a substitute forms developer to precisely place data in specific areas to match pre-defined scannable templates.

Absolute positions are used when any type of data field must be placed in an exact row/column position on the 10 characters per inch by 6 rows per inch grid.

Although this is a viable solution for automated forms processing, this variation is not user- friendly. To the taxpayer or preparer, it looks as if something is wrong when lines are missing and when the text is so far away from the data. They make numerous phone calls to the taxing agency and to the software provider about the appearance of the form.



For the year Jan. 1 - Dec. 31, 2001 or other year beginning er	r taxable						WITBU
Form 1. Massachusetts	s Resident Income	Tax Re	turn				2001
FIRST NAME	MIDDLE IF	JITIAL	LAST NAME				YOUR SOCIAL SECURITY NUMBER
THOMAS SPOUSE'S FIRST NAME	P MIDDLE II	ITIAL	TAXPAYER SPOUSE'S LAST NAME				123-45-6789 SPOUSE'S SOCIAL SECURITY NO.
MARY STREET ADDRESS	R		TAXPAYER CITY/TOWN/POST OFFIC	E		STATE	987-65-4321 ZIP+4
123 MAIN STREET			ANYTOWN CITY/TOWN/POST OFFIC	E		MA state	01234 ZIP+4
NAME/ADDRESS CHANGED SINCE 2000	TAXPAYER DECEASED	SPOUSE	DECEASED	TOTAL	• •		
1. Filing status (select one of	sirou Single	\$1 Spc	X Married filing io	int return	\$	Note: This contribution will Married filing constr	not change your tax or reduce your refund
2. Exemptions:	Fill in if noncustodi	househole al parent	d (both must sign	n return)	X	Soc. Sec. number in the Fill in if using whole	e appropriate space above) e-dollar method
a. Fersonarexemptions. I	i single of married lining	i seharare	ny, enter 34,400. If	nead of nou	Senon	a, enter 30,000	8800 00

The example above shows the substitute version of this form that software developers would create. It uses row/column positions for data. Software developers cannot support 2-color printing or drop-out ink.

Advantages of Drop-out Ink

- Any format that the taxing agency wishes to data capture can be implemented.
- The imaged file size is smaller for easier data storage.

Disadvantages of Drop-out Ink

- Absolute row and column data positioning is not easily maintained due to printing constraints.
- A normal full page of text and data cannot be attained because of the large masked areas for data capture. Text must be omitted from the computerized version to provide adequate clearance around the scannable data.
- Since computer-generated forms cannot duplicate drop-out ink, taxpayers and practitioners often question whether the form is authentic. Taxpayers frequently call the software developer and the taxing agency, complaining that the form "doesn't look like the standard tax form."

Scanlines

A scanline is a line of characters in a specific location that is scanned, such as an estimated tax voucher's check digit line on the bottom of the coupon. NACTP prefers that this line be produced in Courier, Courier New, or an OCR-A font. Scanlines are usually placed in absolute or fixed positions. They need to be positioned at least ½ inch in from the edge of the paper to ensure that all desktop printers can successfully print them.

02170 1230067891 06408
Sample scanline



Some scanlines can look like some states' document ID codes, but there's an important difference. Document IDs generally encode static data. They do not change from return to return. On the other hand, scanlines are dynamic. They often include data such as a taxpayer's name or social security number and/or the payment amount due, which will vary with each voucher or return.

Advantages of Scanlines

- A scanline provides a compact representation of any pertinent data that the revenue agency wishes to capture.
- If needed, a scanline can be read visually.
- Taxpayers are given a "normal" looking form.

Disadvantages of Scanlines

- Scanlines require precise row/column positioning that is not easily maintained due to desktop printing limitations.
- All data for a certain form must have the same placement to get the most accurate read.

6.3 Summary

One-dimensional and two-dimensional bar codes, QR codes, scanbands, scanlines, and document identification codes leave the taxpayer with a "normal-looking" form while still enabling the taxing agency to easily scan the returns, reducing peak season data entry needs. Clearly, the move toward scannable forms will provide considerable cost savings and processing efficiencies, making it a popular option for taxing agencies. While this move poses certain challenges for both the computerized tax processing industry and taxing agencies, the transition can be facilitated by early discussions between both parties. Working together, we can achieve successful outcomes for everyone involved.



7. Government Specifications

7.1 Government Specifications for the Reproduction of Tax Forms

Government specification documents form some of the most critical components in the substitute form design, development, and approval processes. They serve as the foundation of how software developers should reproduce and submit substitute tax forms, provide key compliance requirements, and explain how tax software companies should communicate with the governmental tax agencies.

NACTP recommends that all tax agencies produce a general specifications document describing reproduction of substitute tax forms and the agency's forms approval process. Whenever possible, the tax agency should publish its specifications documentation at the same time or before the posting of the season's first draft forms.

NACTP member companies are willing to review any draft specifications and provide feedback on their ability to conform to state requirements. This review provides tax agencies with early season detection of errors and inconsistencies so the agency can modify the specification before it's published for wider use. NACTP has done so with great success with several tax agencies.

A list of useful items to include in the specifications follow. Not all items may be appropriate in every specification.

- Revision date references for each updated specification release.
- Anticipated changes in the forms design and approval process for the upcoming season.
- List of new, retired, and unchanged forms for the coming tax season.
- Current primary and secondary tax agency software company contact, including name, address, phone number, fax number, e-mail, and areas of responsibility. As circumstances dictate, tax agencies should distribute updated or changed contact information throughout the tax season to all NACTP GLC members by using the listserv address (nactp_glc@nactp.org).
- Approval periods and deadlines, such as the earliest and latest dates that forms will be accepted for approval review. If these dates vary by form or type, please detail those variations.
- Amount of time required to review and provide feedback on a company's approval package.
- Discussion of available waiver procedures. This will facilitate review and discussion of software provider limitations before, rather than during, the approval process.
- Number of sets and number of copies required for each form. This applies to both blank and data-filled form samples.
- Guidance on when agency-provided scenarios for data-filled samples need to be included in an approval submission. The data in these scenarios should be technically and logically consistent.



- A list of common issues affecting approval rejections or processing rejections from the previous year.
- Special sections on the unique requirements and/or processes for secondary form developers (those companies who purchase forms from another software company to use in their software).
- Barcode type, dimensions, stroke widths, wide-to-narrow ratios, placements, and other detailed measurements should be clearly described. Ranges of acceptable tolerances should be defined so that software developers can build barcodes with the best possible grades.
- Scanline and scanband fields should have clearly detailed information regarding the row and column placements, minimum lengths, maximum lengths, permissible characters, and proper formatting for these fields.

Specifications materials and sample form images should be reconciled before they are published. Contact the NACTP Government Liaison Committee if you would like guidance or examples for creating form specifications.



8. Web Sites

8.1 NACTP Web Site

The NACTP web site, (<u>http://www.nactp.org</u>), offers many services to NACTP members and government revenue agencies. These services include:

- Additional details on membership benefits and services (link)
- Membership application, e-mail listserv, and directory update form (link)
- Vendor ID number request form (<u>link</u>)
- Providing links to state and federal revenue agencies' web sites (link)
- Posting of important standards documents (link)
- Listing contact information for the state revenue agencies
- Access to member discussion forums, NACTP meeting notes, taxing agency presentations and more.

8.2 Revenue Agency Web Site Design

Developers of tax software truly appreciate revenue agencies' efforts to provide special web pages dedicated to the needs of the computerized tax processing industry. Such websites are valuable tools that enable software developers to complete form, barcode, and scanline procurement, development and approval in an expedient manner. To ensure a highly effective and organized government-maintained web page, the NACTP recommends that these web sites include:

- Preliminary forms, specifications, instructions, approval test cases (if applicable), and publications posted on a single secured page available to developers. Final forms made available to software developers before they are released to the public can also be posted on the secured page. Once final forms and instructions are released to the public, they should also be copied to a non-password protected area on the web site.
- A notice sent to the NACTP email list stating when the web page was last updated and what was changed. NACTP recommends that this information appear on a form-by-form basis.
- Tax calendars.
- Links to the NACTP web site at http://www.nactp.org

To make it easier for developers to access the information they need, NACTP recommends that:

- Menu driven user screens with quick access to action screens.
- Easily navigable pages.
- Have some type of help available.
- All image-intensive pages contain the same information when the images are turned off.



- Availability of several sorting options, especially sorting by date posted.
- All documents listed should clearly be marked as "Draft" or "Final" without having to view the actual document.
- Revision dates are listed for all forms as well as posting dates.
- SoftwareProviders are notified when new or updated forms are added to the web site by using the http://www.nactp.org email address list.
- A "What's New" feature area for forms and/or legislation updates should be included.
- When final forms are posted to the public site, they should also be posted to the software developer's site.

NACTP members have found that these features are the most useful to software developers. Revenue agencies that are interested in further improving or redesigning their web sites should refer to the following list of features. A truly excellent revenue agency web site should also:

- Enable the user to sort forms by date posted.
- Identify forms that will not change and if submission is required for the upcoming tax season.
- List obsolete forms and their replacements, if any.
- List anticipated posting dates for unreleased documents.
- Provide complete contact information for all relevant approvers including a street address, phone, fax number and email address.
- Provide clear form approval specifications that detail the preferred submission format for approvals and resubmission (courier, email, mail, or fax). Also detail the quantity and type of form copies and/or test samples required for approvals.
- Provide a link to information on state government legislative changes or updates.

8.3 Forms Posting Site

NACTP recommends that taxing agencies post forms, instructions, specifications, approval test cases (if applicable) and publications as soon as they are available. Postings should be done on a document-by-document basis (rather than waiting for a group of documents to be ready). If your agency is apprehensive about posting draft forms, consider these other options:

- Place them in a secured area on the DOR website.
- Post them on the FTA's secure State Exchange Server (SES) site. Contact the FTA at support@taxadmin.org for help with a state account.
- Contact the NACTP webmaster at <u>webmaster@nactp.org</u> to have them posted to a secured area on the NACTP site.
- Email them directly to NACTP members at <u>nactp_list@nactp.org</u>.



On forms download pages, NACTP recommends that revenue agencies:

- Post draft forms, instructions, publications, approval test cases and specifications as early as possible, in a secured (password protected) area that is accessible only by software developers.
- Post a forms release schedule as early as possible.
- Post instructions, specifications, test cases and publications in PDF or SGML format.
- Clearly indicate the form year, either at the top of a section or next to the form itself.
- Indicate the posting (upload) and revision date for each form. Since not all forms are revised annually, a year date heading does not cover all date concerns.
- When a form or document is posted with revision or editing marks or password protected, please also provide a companion copy that is free of marks or provide a way to turn off the editing feature.
- Avoid adding password security on a distributed form or document. This prevents software developers from using compare utilities to compare against prior documents.

Tax software developers appreciate the convenience of various sorting capabilities on a download page. The following sorting options are the most useful:

- Alphabetically, by form name
- By upload or posting date
- By tax type or division (individual, corporate, partnership, fiduciary, etc.)
- Notification of final forms being reposted on the state websites after they were previously posted as final forms and approved by the DOR. Notification should include instructions if the DOR requires resubmission for further approval.

8.4 SES and State Revenue Agency Web Sites

State Exchange System (SES)

Many states are now using the State Exchange System to post e-file specific items for the tax software community. As of TY2018, a growing number of states are also using the SES to post substitute forms and specifications. Presently, each state agency may set up their SES folder structure at their discretion. NACTP recommends using the following folder structure on SES:

XXST.TYXX>

- **LOI** > [Post state LOI and any other generalized state documents]
- **Forms>** [Subfolders by tax type]
- **E-file>** [Subfolders by tax type]

SES examples: Arkansas, South Carolina, Idaho

Arkansas and South Carolina have one top-level state folder on the main SES webpage with 3 folders - LOI, Forms, Efile - as shown below. Each folder then contains documents by tax type. This layout makes it easy for developers to get to the information they need without having to search a myriad of folders.



	Kiteworks mes + Scottikyizott	kiteworks Files > SCST.Txyr2017
	Name 🗸	Name V
	SCST.LOI	SCST.Sales
	SCST.Forms	SCST.Partnership
	SCST.Efile	SCST.Individual
		SCST.EstateTrust
		SCST.Corporate
		SCST.Business
•••		
	• Name ~	Name ~
0	Name ~ ARST.TY18.LOI	Name ~
	Name ~ ARST.TY18.LOI ARST.TY18.Forms	 Name ~ ARST.TY18.Partnership ARST.TY18.Individual
	Name ~ ARST.TY18.LOI ARST.TY18.Forms ARST.TY18.Efile	 Name ~ ARST.TY18.Partnership ARST.TY18.Individual ARST.TY18.EstateTrust
	Name - ARST.TY18.LOI ARST.TY18.Forms ARST.TY18.Efile	 Name ~ ARST.TY18.Partnership ARST.TY18.Individual ARST.TY18.EstateTrust ARST.TY18.Corporate
	 Name ✓ ARST.TY18.LOI ARST.TY18.Forms ARST.TY18.Efile 	 Name ~ Name ~ ARST.TY18.Partnership ARST.TY18.Individual ARST.TY18.EstateTrust ARST.TY18.Corporate ARST.TY18.Composite

Idaho follows the basic folder structure used by Arkansas and South Carolina, but also provides a 4th folder for 2D documents. Idaho also preserves a 2D archive folder with prior year specifications, which is helpful for reviewing prior year information and requirements.





State Revenue Agency Websites

While many state taxing agencies have continued to improve their websites, we have gathered some state websites that are worth noting. Most sites are password protected and you will need a valid user login to access.

California: The FTB's computerized tax software processor (CTP) site is well organized, presenting an initial welcome page that provides software providers with any necessary updates. From there software companies can click on the directory for the forms which can be filtered by last revision date, type of form, status of form, or year of form. A resource section provides tax tables, inflationary updates, and contact information for companies should they need to get in contact with someone at the FTB. https://www.ftb.ca.gov/Computerized_Tax_Processors/login.asp?PageRequested=/Computerized_Tax_Processors/index.asp

Indiana: Indiana lists all the relevant information on one page including links to specific developer information bulletins, a master list of all the changes that have been made on forms, along with any updates or corrections that have been made to the forms. The forms are then listed by their entity type. This is a one-stop shop for all the information a developer will need, and is laid out where a developer can get to everything quickly. The developers can also see when an updated form was posted and whether a form is currently in draft or final status. https://secure.in.gov/dor/software/proofs/3889.htm

Maryland: Maryland does a great job of listing all relevant developer information on one page, and then they have a link for software companies to get to substitute forms and other relevant information. Once on their final and draft forms page all of the forms are listed by entity type and the forms and instruction books are separated. There are also zip files listed for each form that contain the gridded copy of the form.

http://taxes.marylandtaxes.gov/Tax_Professionals/Vendors_and_Developers/

Minnesota: Minnesota keeps their site well organized. They group forms according to entity type and allow you to sort forms by their name or the date they were last modified. Minnesota also does a good job of listing the change under the form name when they repost a form if the change is minor so developers know where to look on the form for the updated information. Minnesota's main software provider page also lists key dates when forms will be posted and other items will be due. The DOR does a great job of sticking to this schedule at least for the initial draft and initial final copy of a form. The DOR provides a separate section for grid forms, along with e-file reject codes (the corresponding e-file



schemas come from the FTA site). http://www.revenue.state.mn.us/tax_prof/software_providers/Pages/key-dates.aspx

Maine: This site is organized well. Dates are posted and the site is clearly marked with status of form. There is a section with news about updates, changes and schedules. http://www.maine.gov/revenue/vendors/

Missouri: All forms show a posted revision date. The specifications are easy to find. This site is easy to navigate. <u>https://dor.mo.gov/vendors/</u>

New York: New York's tax software provider website has sections for draft vs final forms and items are removed from the draft section when they become final. New York is also great about listing the date the form is posted to the site and not back-dating. The developer pages also give an overall date for when the page was last updated. The website is laid out in a table-like format and it is easy to follow because if a subsequent version of the form/instructions is released as a draft it goes to the bottom right of the table, so you can easily check what is new on the webpage. https://www.tax.ny.gov/draftforms/incomedraft.htm

North Dakota: Very organized site, forms appear in order, with the draft or final release dated. There is a special link for specifications and changes for the 2009 tax year <u>https://www.nd.gov/tax/user/tax-professionals/software-developers</u>

Oregon: Very well-organized; excellent display of revision dates and "final/draft" status. <u>https://secure.dor.state.or.us/draftforms/index.cfm?fuseid=2</u>

South Carolina: South Carolina's developer website does an excellent job of laying out the forms by entity type. SC also has a column that shows the revision date that the form was last updated, and the date that the revised form was posted. On the main tax software provider page SC also list forms that were recently updated in the what's new section.



9. Definition of Terms

Tax Form Terminology	
Answer Sheet	An answer sheet is a scannable tax form that includes data only and no text describing the data. Only variable data, such as name, address, and tax figures, prints on the page.
Computer-Generated Substitute Form	A form entirely prepared through the use of a software program and printed on a computer printer (such as laser or ink jet) so that the tax form format and variable data are printed entirely by the computer printer.
Computer-Prepared Form	A form where a computer printer has inserted variable data as a calculated field.
Format	The overall physical arrangement and general layout of a tax form.
Graphics	Those parts of a printed tax form which are not variable data. Generally, these are line numbers, captions, shading, special indicators, special symbols, keypunch symbols, borders, rules and strokes created by a page layout system.
Item Caption	The textual portion of each line on a tax form that identifies the variable data elements on the line.
Laser-Generated Tax Form	A tax form that has the format and variable data printed simultaneously using a laser printer.
Line References	The line numbers or letters used to identify each captioned line on a tax form.
Manually-Prepared Form	A printed tax form on which the taxpayer's variable data is entered by an individual using a pen, pencil, typewriter or other non-automated equipment.
Substitute Tax Form	A tax form that differs in any way from the official government version.
Supporting Statement	A document providing detailed information to support an entry for a line(s) on an official or substitute tax form filed with a tax return.
Variable Data	The information entered on a tax form in the data entry fields.



Image Processing To	erminology
Bitmap	A digital image format used in computers. Rows and columns of dots represent a visual image.
Check Digit	A digit that ensures data integrity. Using a special formula, the check digit is calculated from the user- entered data and added to a data string to verify that all information has been entered correctly. Most but not all scanlines have a check digit as the last number in the string. (See also "Scanline" and "Modulus 10.")
Data Capture	The process of retrieving information from either an electronic picture (See also "Imaging") or the paper documents. (See also "Scanning")
Data Entry Field	Any graphically defined area designated on a form for the insertion of data such as dollar amounts, quantities, responses and check boxes. (Also called a "variable data field.")
Data Verification	The process of confirming the data on a scanned or keyed document.
Document Identification Code (Doc ID)	A string of characters placed on a document in order to identify a form for the capture of information on that form.
<u>Drop-out Ink</u>	Ink that cannot be read by scanning equipment, usually blue or red in color.
Dynamic Data	Information generated by a software engine, rather than as a static image. Two-dimensional bar codes can contain this type of information.
Entity Area	The designated area on a document that contains taxpayer information such as name, address, and Social Security Number. (Also called the "Label Area.")
Error Correction Level	A feature of the PDF417 two-dimensional bar code specification where code words are inserted into the symbol to facilitate recovery of data from a damaged or unreadable bar code.
Imaging	The process of sending a document through a scanner to create an electronic picture for either storage or further processing. (See also "Data Capture.")
Label Area	The designated area on a document that contains taxpayer information such as name, address, and Social Security Number (Also called the "Entity Area.")



Modulus 10	The standard means of calculation or algorithm for a check digit at the end of a scanline. Also referred to as Modulus 10 Self-check Digit Computation. (See also "Check Digit" and "Scanline".)
Monospaced Font	A font in which every character has the same horizontal width. Thus an "i" will have the same set width as an "M" or "W." Courier is an example of a monospaced font.
OCR (Optical Character Recognition)	Machine recognition of data from printed, typed or imaged text. The most easily recognized fonts are monospaced fonts such as Courier.
<u>One-Dimensional (1-D)</u> <u>Barcode</u>	A pattern of lines of varying density and space that the scanner uses to identify, index, route and track documents. Data is coded based on the position of these lines, their widths and the widths of the white spaces between them. One-dimensional bar codes are composed of static or pre- defined, non user-specific data. Therefore, they can be written directly into a program or "hardcoded" as part of the graphics of a tax form where they cannot be easily modified.
<u>Patch</u>	A pattern of horizontal lines of varying density and space that the scanner uses to identify the next set of documents. Unlike scanbands or bar codes, there is no data encoded in a patch.
<u>Pitch</u>	In a monospaced font, the number of characters that fit in one horizontal inch. A 10 pitch font will have 10 characters in an inch.
Printer Driver	A program that controls how a computer and printer interact.
<u>Registration Mark (</u> also called "Reference Mark" or "Target Mark")	A dark mark printed on a document or form to provide an accurate frame of reference for locating fields. On tax forms, registration marks most often appear at the four corners and look like the "crop marks" used for alignment of camera-ready documents.
<u>Scanband</u>	The consolidated area on a document that contains tax return information to be processed.
<u>Scanline</u>	A line of characters in a specific location that is scanned, such as an estimated tax voucher's check digit line on the bottom of the coupon. This line is generally produced in Courier or OCR-A font. (See also "Check Digit" and "Modulus 10.")
<u>Scanning</u>	The mechanical process that either produces an electronic picture or reads the paper document for data (See also "Data Capture" and "Imaging.")
Stroke Width	In a one-dimensional barcode, the width of an individual bar used to construct the barcode



Template	A pre-defined pattern contained in a file that is used as a guide in scanning tax forms accurately.
<u>Two-Dimensional (2-D)</u> <u>Barcode</u>	The two-dimensional bar code is a matrix code. Data is coded based on the position of black dots within a matrix. Each black element is the same dimension, and the position of the element is the factor that determines the data that is coded. A two-dimensional bar code stores data vertically as well as horizontally. Two-dimensional bar codes are created from user- specific, taxpayer entered data. Therefore, a two-dimensional bar code is dynamic, not static.
Variable Data Field	Any graphically defined area designated on a form for the insertion of data such as dollar amounts, quantities, responses and check boxes. (Also called a "data entry field.")
<u>Wide to Narrow Ratio</u>	The ratio of the wide bar width to the narrow bar width in a one- dimensional bar code. A wide to narrow ratio of 3:1 would be represented using wide bars that are three times as wide as the narrow bars. The wide to narrow ratio is more important than the total width of the bar code.



ASCII (American Standard Code for Information Interchange)	A popular coding method that assigns numeric values to text characters. Virtually all computers use ASCII codes to communicate with each other.
Address	A unique name for a computer network component. Every file on the Internet's World Wide Web (www) has a unique address called a Universal Resource Locater (URL). Each e-mail account has a unique e-mail address. The e-mail address for the NACTP Government Liaison Committee is <u>nactp_glc@nactp.org</u> . (See also"URL.")
Band width	The amount of data that can be passed along a communications channel, such as a modem, in a given period of time.
Broadcast e-mail	A method of sending one e-mail message to each member of a group simultaneously.
	Sending update notifications to <u>nactp_glc@nactp.org</u> is an example of broadcast email.
Browser	A program that allows information to be accessed and read on the Internet.
Client	In client-server computer architecture, an application that runs on a personal computer or workstation connected to a network. The client relies on a server for some processes. (See also "Server.")
Compression	The process of reducing the space required for data storage of a file.
Domain Name	The unique name that identifies an Internet site. Domain names always have two or more parts, separated by dots. The part on the left is the most specific, and the part on the right is the most general. A machine may have more than one domain name, but a given domain name points to only one machine.
	The NACTP domain name is NACTP.org . Here, the ".org" extension means that this domain name belongs to a non-profit organization. Other extensions include ".gov" (for government agencies), ".mil" (for the military), ".edu" (for educational institutions), ".com" (for commercial businesses) and ".net" (for network organizations).
EDI (Electronic Data Interchange)	Submission of tax returns or tax data electronically in a standard format over a common network.
(FTP) File Transfer Protocol	A method of transferring files from one computer to another over a network. The protocol ensures that the sending and receiving programs can check that the information has been transmitted and received correctly.



Gateway	A computer that connects multiple networks when the networks use different protocols.
Home Page	The entry point to a web site on the Internet's World-Wide Web. Home pages provide links to other pages in the site.
	The NACTP's home page on the Internet can be found at <u>http://www.nactp.org</u> . It is the first page that you will see when you connect to our site.
Host or Remote Hosting	A computer system that processes applications on a network. Users connect to it over a network or through a modem.
HTML (HyperText Markup Language)	The coding language used to create Hypertext documents for use on the Internet. A block of text is surrounded with codes enclosed in angle brackets (<>). The codes specify how the text should appear. Additionally, HTML can specify hypertext links to other files on the Internet.
HTTP (HyperText Transport Protocol)	A protocol that allows users to view the content of files on the Internet's World-Wide Web using a browser. HTTP makes hypertext browsing over the Internet possible. Users select links specified in a Web document to connect to and view another document even though it may be located on a different computer.
Hypertext	Data that links key elements, allowing the user to move through information non-sequentially. The links in this document are an example of hypertext.
Internet Protocol (IP) Address	A way to differentiate one computer from another over the Internet. Each computer connected to the Internet is assigned at least one unique Internet Protocol or IP address. An IP address can be static from session to session, or dynamic, which is especially true for a dial- up connection.
Link	Hypertext that, when selected, brings the user directly to another document that may or may not be located on the same server.
PCL (Printer Control Language)	A page-description language used to send formatting instructions to printers. PCL consists of command codes that tell the printer where and how to print the characters on a page, what fonts and spacing to use, and the size and orientation of the page.



PDF (Portable Document Format)	An openly published file format used to represent a document independent of the application software, hardware and operating system used to create it. PDF files provide a way to distribute documents across diverse hardware and software platforms. This document is published in PDF format.
PPP (Point-to-Point Protocol)	Method of exchanging data packets with the Internet over phone lines.
Packet	The basic unit of Internet data. A message is assembled into packets, each marked with the address and other pertinent information.
Password Protected	A location on a web site that requires access with a user name and password. Such a location is password protected. (See also "Secured Area or Secure Site.")
	www.nactp.org has password protected areas on its web site.
PostScript	A page-description language used to send formatting instructions to printers. It consists of command codes that tell the printer where and how to print the characters
	and graphics on a page, what fonts and spacing to use, and the size and orientation of the page.
Remote Host	A computer system that acts as a server for software applications and web pages. Off-site users can connect to it through a modem. (See also "Host.")
Secured Area or Secure Site	Location on a web site that requires access with a user name and password. Such a location is password protected. (See also "Password Protected.")
	www.nactp.org as well as many revenue agency web sites have secured areas.
Server	A computer that provides resources over a network. (See also "Host" and "Client.")
SGML (Standard Generalized Markup	A structured document technology or "language" used by the electronic publishing industry for data design and
SLIP (Serial Line Internet Protocol)	Data transmission format used when transferring Internet packets over low-speed serial interfaces.
TCP/IP (Transmission Control Protocol/Internet Protocol)	The format used by the Internet for data transmission. TCP ensures the information is delivered, while IP determines the packet structure of the data as well as the addressing used to deliver the package to its destination. (See also "IP Address.")



URL (Uniform Resource Locater)	The Internet address of a particular file or other resource on the Internet. The URL for the NACTP is <u>http://www.nactp.org.</u> The first part, http refers to the protocol needed. The second part, <u>www.nactp.org</u> , is the domain name.
XML (Extensible Markup Language)	A subset of SGML designed to be used on the World Wide Web. XML has been designed for interoperability with both SGML and HTML. (See also "SGML.")

10. Abbreviations for Substitute Tax Forms

10.1 Rules for Using Abbreviations

- Spell out words whenever possible. Abbreviate only when necessary to allow space on the line.
- Only abbreviate when the meaning of the abbreviated word is clear in its context on the form.
- Do not use periods after abbreviations (except "no." for number and "U.S." for United States).