STIBO SYSTEMS
MASTER DATA MANAGEMENT

SOLUTION ENABLEMENT

Artificial Intelligence (AI) Options with STEP

2025.4 Update (December 2025)

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Artificial Intelligence (AI) Options for STEP Solution Enablement

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ProductGen AI STEP Solution

Powered by Azure OpenAI, STEP's generative AI solution allows users to automatically generate content for a variety of use cases. Each use case has its own collection of pre-defined AI prompts to choose from, each of which are stored within a business rule. In STEP terms, users prompt the AI to generate content by executing whichever business rule represents the prompt they need. Some details of a given prompt, such as a specific attribute or value being acted upon, can be customized via the business rule, but each prompt is largely pre-defined once it has been added to the system.

The exact process of executing prompts and generating AI content varies by use case. However, each use case leverages workflows in order to verify that the output the AI generated is acceptable. Additionally, once a prompt has been adjusted (i.e. engineered) to fit the needs of the user, if can be applied to a large collection of products. As an example, the user may use bulk update to generate content for all the objects in which the prompt is relevant.

> **Note:** ProductGen AI only applies to product objects. Entities are not considered.

Current use cases include:

- Product Text-to-Text Use Cases, which focus primarily on generating attribute values and search terms.
- Group-Related Use Cases, which are concerned with generating titles and descriptions for groups.
- Attribute Value Translation Use Cases, which are used to translate search terms and marketing descriptions.

- Image-Related Use Cases, which are used to generate accompanying text for images.

Additional information:

- ProductGen AI Best Practices
- ProductGen AI Subscription Information

Product Text-to-Text Use Cases

The product text-to-text use cases involve the generation of text-based AI content for product data and includes prompts that generate output for: search terms, marketing descriptions, keyword density, attribute group attributes, and image descriptions.

An individual product can be associated with multiple prompts, and each prompt can be used for any number of different products. Prompts are executed by triggering a relevant product, which can be done in a variety of ways, such as a step within a workflow, as part of an import, or as part of an event processor process. Additionally, multiple products can be triggered at once if included in a collection when initiating a bulk update. This should only be done once the prompts have been finalized via prompt engineering (see below).

Once the product is triggered and an output is generated by the AI, it is saved in the dedicated prompt-output attribute on the relevant product. Next, the product is pushed into the **Generative AI Review** workflow to review the prompt output. The user can customize which product workflow or workflow step the product is pushed to when the output is generated.

Product text-to-text prompts

Prompts **PTTT02**, which generates marketing descriptions, and **PTTT03**, which calculates the keyword density of generated search terms, are used together to generate text for products based on existing product data and previously generated data. These two prompts can be executed in sequence where the output for one prompt can be used for the input of the other.

Prompt **PTTT04** generates missing attribute values of all the attributes in an attribute group based on existing product data. Which attribute group needs attributes to be generated for it must be configured in the associated business rule.

Prompt **PTTT05** generates description text for a product based on existing product data and the metadata of all referenced images. In order to utilize this prompt, the referenced images must have relevant metadata to pull from.

Copy output to attribute

Once an output has been generated, it is possible to copy it to a target attribute, if desired. Typically, this is only done if the generated output is being kept separate from existing product data. The existing data should only be overwritten if the AI-generated output has been reviewed (e.g., being approved in the review workflow).

Prompt engineering

A prompt is defined by its input, such as any relevant attributes, instructions, and the products which reference the prompt. Prompt input may include:

- Parameters
- Sort order for sequential prompt execution
- Input attributes, focus attributes, and image metadata attributes
- Persona, target audience, and message tone
- Attribute group output
- Output attributes and maximum number of characters

The most straightforward way to create a new prompt is to copy an existing one, duplicate output and target attributes for it, add them to the relevant List of Values (LOV), and then edit the new prompt.

The product input and output attributes used in each prompt get their selectable values from an LOV. The easiest method for creating a new input / output attribute is to duplicate an existing one and add the ID for the new product input / output attribute and the name of the LOV.

Automating the execution of prompts

By default, executing a prompt to generate an output is done by either manually selecting the **Generate AI Output** button, or by executing a relevant bulk update. In either case, a business rule is executed and an event is generated in the event processor. To automate prompt execution, use the code of the business rule which generates events for the event processor either as part of an import, as part of an existing workflow, or as part of another existing process or business rule.

Embed into existing workflow

By default, after the AI output is generated, the solution initiates products into a workflow called **GenAI Review Workflow – Texts**. If desired, this can be changed to another existing workflow or workflow state. To accomplish this, the user must edit the business rule **GenAI - Text for Products – Generate Output** and change the variable "aiReviewWorkflow" to the ID of the desired workflow. To initiate the product into a specific state of the workflow, change the code under "Initiate in Ai Review or Error Workflow".

Automatically copy output to target attribute

By default, the business rule responsible for copying the generated output to the target attribute on the product is **GenAI – Text for Products – Copy To Target**. If desired, this can be changed to another attribute by enhancing the business rule with, for example, a lookup table that matches output and target attributes.

Group-Related Use Cases

The group-related use cases involve the generation of text-based AI content for product hierarchies and product classifications based on data from those groups and all products that belong to them.

An individual group can be associated with multiple prompts, and each prompt can be used for any number of different groups. Prompts are executed by triggering a relevant group, which can be done in a variety of ways, such as a step within a workflow, as part of an import, or as part of an event processor process.

Once the group is triggered and an output is generated by the AI, it is saved in the dedicated prompt output attribute on the relevant group. Next, the group is pushed into the **Generative AI Review** workflow to review the prompt output. The user can customize which workflow or workflow step the group is pushed to when the output is generated.

Group related prompts

Prompt **GAIDGRP01** generates a title for the group based on existing group data and data of all products that belong to it.

Prompt **GAIDGRP02** generates a description for the group based on existing group data and data of all products that belong to it.

Prompt engineering

A prompt is defined by its input, such as any relevant attributes, instructions, and the groups which reference the prompt. Prompt input may include:

- Parameters
- Mandatory group-input attributes and product-input attributes
- Persona, target audience, and message tone
- Attribute group output
- Output attributes and maximum number of characters

The most straightforward way to create a new prompt is to copy an existing one, duplicate output and target attributes for it, add them to the relevant List of Values (LOV), and then edit the new prompt.

The group input and output attributes used in each prompt get their selectable values from an LOV. The easiest method for creating a new input / output attribute is to duplicate an existing one and add the ID for the new group input / output attribute and the name of the LOV.

Automating the execution of prompts

By default, executing a prompt to generate an output is done by manually selecting the **Generate AI Output** button, which executes a business rule and generates an event in the event processor. To automate prompt execution, use the code of the business rule which generates events for the event processor either as part of an import, as part of an existing workflow, or as part of another existing process or business rule.

Embed into existing workflow

By default, after the AI output is generated, the solution initiates groups into workflows called **AI Review Workflow - Grouping Blue to Text** for product hierarchies and **AI Review Workflow - Grouping Yellow to Text** for product classifications. If desired, this can be changed to another existing workflow or workflow state. To accomplish this, the user must edit the business rule **GenAI - Text for Groupings – Generate Output** and change the variable “aiReviewWorkflowBlue” or “aiReviewWorkflowYellow” to the ID of the desired workflow. To initiate the product into a specific state of the workflow, change the code under “Initiate in Ai Review or Error Workflow”.

Automatically copy output to target attribute

By default, the business rule responsible for copying the generated output to the target attribute on a group is **GenAI – Text for Groupings – Copy Output to Target**. If desired, this can be changed to another attribute by enhancing the business rule with, for example, a lookup table that matches output and target attributes.

Attribute Value Translation Use Cases

The attribute value translation use cases involve the generation of text translations for attribute values, and includes prompts that generate output for search terms and marketing descriptions.

An individual product can be associated with multiple prompts, each responsible for translating different attributes, and each prompt can be used for any number of different products. Prompts are executed by triggering a relevant product, which can be done in a variety of ways, such as a step within a workflow, as part of an import, or as part of an event processor process. Additionally, multiple products can be triggered at once if included in a collection when initiating a bulk update. This should only be done once the prompts have been finalized via prompt engineering (see below).

Once the product is triggered and an output is generated by the AI, it is saved in the dedicated prompt output attribute on the relevant product. Next, the product is pushed into the **Generative AI Review** workflow so the user can review the prompt output. The user can customize which product workflow or workflow step the product is pushed to when the output is generated.

Currently, the only supported source language is English, which can be translated into German, French, and Dutch as part of the standard solution offering.

Translation prompts

Prompt **att_GENAIPTTT01_SearchTerms** translates search terms associated with relevant products.

Prompt **att_GENAIPTTT02_MarketingDescription** translates marketing description attribute values.

Prompt engineering

A prompt is defined by its input, such as any relevant attributes, instructions, and the products which reference the prompt. Prompt input may include:

- Parameters
- Attributes to translate
- Language(s)
- Persona, target audience, and message tone

The most straightforward way to create a new prompt is to copy an existing one, duplicate output and target attributes for it, add them to the relevant List of Values (LOV), and then edit the new prompt.

The product attributes to translate and the language used in each prompt get their selectable values from an LOV. The easiest method for creating a new product attribute to translate or language is to duplicate an existing one and add the ID for the new product attribute / language and the name of the LOV. The relevant LOVs for these use cases are **Attributes to translate** (product attribute value) and **Language(s) to translate to** (corresponding with context).

> **Note:** Creating new languages and changing the source language requires a specific workflow and additional configuration.

Automating the execution of prompts

By default, executing a prompt to generate an output is done by either manually selecting the **Rewrite in Language** button, or by executing a relevant bulk update. In either case, a business rule is executed and an event is generated in the event processor. To automate prompt execution, use the code of the business rule which generates events for the event processor either as part of an import, as part of an existing workflow, or as part of another existing process or business rule.

Embed into existing workflow

By default, after the AI output is generated, the solution initiates products into a workflow specific to the language: **AI Review Workflow - Text to Translation NL**, **AI Review Workflow - Text to Translation DE**, or **AI Review Workflow - Text to Translation FR**. If desired this can be changed to another existing workflow or workflow state. To accomplish this, the user must edit the business rule **GenAI - Translations - Translate Attribute - Translate Attribute via Generative AI** and change the hard-coded prefix of the workflow ID **wf_AIReviewWF_TextToTranslation** via the variable "aiTranslationWorkflow". Next, edit the business rule to ensure the translation corresponds with the correct workflow by searching for the variable "aiTranslationWorkflowContext" and making any required changes.

Image-Related Use Cases

The image-related use cases involve the generation of text-based AI content for images and includes prompts that generate output for:

- Full text descriptions
- Text extracted from the image
- Alt-text that describes the image

That output can then be analyzed by the AI to generate text for:

- Determining the type of product in the image
- The usage of the product in the image
- Generating SEO keywords

An individual image can be associated with multiple prompts, and each prompt can be used for any number of different images. Prompts are executed by triggering a relevant image, which can be done in a variety of ways, such as a step within a workflow, as part of an import, or as part of an event processor process. Additionally, multiple images can be triggered at once if included in a collection when initiating a bulk update. This should only be done once the prompts have been finalized via prompt engineering (see below).

Once the image is triggered and an output is generated by the AI, it is saved in the dedicated prompt output attribute on the relevant image. Next, the image is pushed into the **Generative AI Review** workflow to review the prompt output. The user can customize which image workflow or workflow step the image is pushed to when the output is generated.

Image-related prompts

There are four different use case categories, each with their own prompt(s).

For generating content using internal image binary to text, three different prompts are available. **Prompt - IBBASET64TT - Full Description** generates text that describes the image based on a visual interpretation of the internal image. **Prompt - IBBASET64TT - Extract Texts** extracts all text within the image based on a visual interpretation of the internal image. **Prompt - IBBASET64TT - Alt-Text** generates alt-text for the image based on a visual interpretation of the internal image.

For generating content using external image binary to text, three different prompts are available. **Prompt - IBURLTT - Full Description** generates text that describes the image based on a visual interpretation of the internal image. **Prompt - IBURLTT - Extract Texts** extracts all text within the image based on a visual interpretation of the internal image. **Prompt - IBURLTT - Alt-Text** generates alt-text for the image based on a visual interpretation of the internal image.

To analyze the content and generate a text-to-text AI output, three different prompts are available. **Prompt - IMETATT - Product Type** determines the type of product in the image based on the image data output. **Prompt - IMETATT - Product Usage** determines the usage of the product in the image based on the image data output. **Prompt - IMETATT - SEO Keywords** generates SEO keywords for the image based on the image data output and the data of the products referencing the image. These prompts can be executed in sequence with those of the previous two categories, where the output for one prompt can be used for the input of the other.

Prompt engineering

A prompt is defined by its input, such as any relevant attributes, instructions, and the products which reference the prompt. Prompt input may include:

- Parameters
- Sort order for sequential prompt execution
- Image metadata attributes, focus attributes, and product attributes
- Persona, target audience, and message tone
- Mandatory output attributes and maximum number of characters

The most straightforward way to create a new prompt is to copy an existing one, duplicate output and target attributes for it, add them to the relevant List of Values (LOV), and then edit the new prompt.

The image input and output attributes used in each prompt get their selectable values from an LOV. The easiest method for creating a new input / output attribute is to duplicate an existing one and add the ID for the new image input / output attribute and the name of the LOV.

Automating the execution of prompts

By default, executing a prompt to generate an output is done by either manually selecting the **Generate AI Output** button, or by executing a relevant bulk update. In either case, a business rule is executed and an event is generated in the event processor. To automate prompt execution, use the code of the business rule which generates events for the event processor either as part of an import, as part of an existing workflow, or as part of another existing process or business rule.

Embed into existing workflow

By default, after the AI output is generated, the solution initiates images into a workflow called **GenAI Review Workflow – Image Texts**. If desired this can be changed to another existing workflow or workflow state. To accomplish this, the user must edit the business rule **GenAI - Text for Images – Generate Output** and change the variable “aiReviewWorkflow” to the ID of the desired workflow. To initiate the image into a specific state of the workflow, change the code under “Initiate in Ai Review or Error Workflow”.

Automatically copy output to target attribute

By default, the business rule responsible for copying the generated output to the target attribute on the image or product is **GenAI – Text for Images – Copy To Target**. If desired, this can be changed to another attribute by enhancing the business rule with, for example, a lookup table that matches output and target attributes.

ProductGen AI Recommended Practices

When adjusting the system and instruction text of the prompts, test the results with a batch of test products to ensure you are seeing the results you expect. Send a portion of these results to expected content approvers to validate the output prior to automating the content generation within workflows or bulk operations.

Where applicable, use a text generation prompt to guide the LLM to provide a confidence score based on what the content should or should not allow. This confidence score can be used as a metric within sufficiency scores to route insufficient content to manual review workflows. See below for example instructions on how to generate a confidence score in a retail environment.

Example prompt

For product ${NAME} with product data ${PROMPT_DATA}

Determine if the quality of this product data is good enough to sell in the North American clothing retail market. The values should not contain poorly written or low-quality content. Avoid typos, grammar mistakes or phrasing that can be misunderstood. Avoid overly generic filler statements such as "Great for all occasions". Avoid terminology specific to factory specs like "yarn #34 blend" so that the text is more refined and readable for an upscale audience.

Avoid content that is off-brand or attribute descriptions that do not match each other. Avoid unverified sustainability claims or medical claims that are not relevant for fashion retail. Based on the adherence to the above requirements, generate a confidence score to determine the value. The score should be between 0 percent and 100 percent. If the confidence score is higher than 80 percent then output the same value.

If less than 80 percent, provide the score along with reasons why the score has been provided and no more than five (5) suggestions for how to correct the data.

ProductGen AI Subscription Information

ProductGen AI subscription details are determined by expected usage (number of requests) per month. The first iteration of ProductGen AI includes text analysis use cases available to all data domains. Metrics of monthly requests from the ProductGen AI subscription will be collected monthly and provided to your account manager.

Subscription Details & Usage Metrics

- Subscription Basis: Determined by expected monthly usage (number of requests).
- Included Features: Text analysis use cases available across all data domains.
- Usage Tracking: Monthly metrics of requests collected from your ProductGen AI subscription.
- Reporting: Usage statistics provided to your account manager each month.