



ATTOM Website Quality Assurance and Control Brief

Created for Kara Taylor, Executive Vice President, Marketing
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1.0: Purpose

The purpose of this document is to provide set quality assurance (QA) and quality control (QC) efforts and protocols regarding the ATTOM public website.

QA and QC are often used interchangeably, and are closely related, but there is a key difference between the two endeavors.

The goal of quality assurance (QA) is to check the website for any errors, weaknesses, and potential points of failure before a new website page or update is published or made widely available to users. Another popular term for quality assurance is “QA Testing.”

Quality control (QC) is focused on continued monitoring of a website and identifying defects or to lessen any impacts that errors or breakages have on the business.

2.0: Scope

The procedures outlined in this brief apply to all ATTOM QA and QC efforts. The scope of this ATTOM QA and QC Brief also details the integration and operation of related software and technology platforms, including BrowserStack, Jira, WordPress, and other technologies that are captured in “Section 4.0: Core Website Technologies” and “Section 5.0: Ancillary Website Applications.”

3.0: Responsibilities

1. Information Technology: ATTOM Informational Technology (IT) has ultimate oversight, responsibility, and management of the ATTOM development and production websites (to be referenced herein as the “ATTOM websites”). The IT personnel involved in overseeing website hosting, development, management, and security include Eric Ring, Vice President, Technology, Nihar Marfatia, DevOps Manager, and Matt Shields, Senior Systems Engineer.

2. Department Website Oversight and Management: Kara Taylor, Executive Vice President, Marketing, manages the department’s administrative and operational oversight of the ATTOM website and all ATTOM Marketing department efforts. Ms. Taylor solely directs the development, build out, and direction of all ATTOM Marketing employees and retained consultants that contribute to the daily operation and success of the website.

3. Website Facilitation and QA/QC: Julian Willis, Senior Website Product Manager, is responsible for ATTOM website Jira ticketing and management, and all quality assurance and quality control efforts. Mr. Willis reports directly to Ms. Taylor and seeks approval on all website projects, tickets, scheduling, and costs from Ms. Taylor, as needed.

4. Website Development and Programming: Karen Walsh, Contract Developer, and Scott Farquharson, Contract Developer, are solely responsible for the development and programming of the ATTOM Marketing websites. Mr. Willis assigns these two WordPress developers specific project tickets from Jira — but is otherwise not involved in any website development, programming, or content changes or updates. All website upgrades, incidents, and changes are handed solely by the two WordPress developers.

5. Website Content Management: Jennifer Von Pohlmann, Director of Content and Public Relations, and Christine Stricker, Senior Marketing Manager, are active “Administrators” in ATTOM’s WordPress instance and update content and text for the public website, as deemed necessary.

6. Website User Experience (UX) Design: Julia Barbiarz, UX Design Contractor, provides UX design for specified ATTOM website pages and projects, which are then assigned to one of the two WordPress developers (Karen Walsh or Scott Farquharson). Ms. Barbiarz does not publish or program in WordPress.

4.0 Core Website Technologies

1. BrowserStack: An automated quality assurance and control platform for desktop, mobile and tablet monitoring, and visual testing, which fully integrates with Atlassian/Jira.

2. Jira Kanban: A project management platform, operated by Atlassian. Jira is the primary ticketing tool utilized for all ATTOM website-related activities and efforts.

3. Pardot: Pardot is Salesforce’s dedicated and fully integrated business-to-business (B2b) marketing platform. Pardot provides the marketing campaigns and forms (embedded into HTML and WordPress) with “iframe” technology, which powers ATTOM’s digital lead generation engine, attribution, and reporting. In its current configuration, ATTOM has dedicated campaigns for each ATTOM website page, along with dedicated forms for each campaign.

4. WP Engine: The sole web hosting and primary security platform for the ATTOM public website, ATTOM is currently operating a dedicated Google Compute-Optimized C2 Server, which is a cloud-based virtual machine (VM). WPEngine is utilized to operate all company development and production websites.

5. WordPress Business: ATTOM utilizes the paid open-source website development platform for companies from WordPress, known as “WordPress Business,” which runs \$300.00 annually and is ultimately managed by Eric Ring, Vice President, Technology, and Nihar Marfatia, DevOps Manager. Overall, WordPress is built on four primary programming languages, including: HyperText Markup Language (HTML); Cascading Style Sheets (CSS); HyperText PreProcessor (PHP); and JavaScript (JS).

5.0 Ancillary Website Software

In addition to the five core instances of software/technology that are employed to operate the ATTOM websites, ATTOM employs 35 individual WordPress Plugins, which are critical applications that provide certain functionality and enable smooth operation of the websites. The current ATTOM WordPress Plugins includes the following applications, listed below. Of these 35 WordPress Plugins 29 are free subscriptions – while six are paid or premium subscriptions (as

noted below). Karen Walsh, consultant, has the longest history of programming for the ATTOM production and development websites – and updates and manages all WordPress Plugins on a weekly and bi-weekly basis. All WordPress Plugin updates and changes are ticketed on the ATTOM Marketing Jira Board.

1. Advanced Custom Fields Pro (Paid subscription – runs \$149.00 annually.)
2. ATTOM Data Table
3. Customizer Export/Import
4. Divi Builder
5. Divi Theme (Paid subscription – runs \$89.00 annually.)
6. Events Manager
7. Facebook Comments Notifier
8. Gravity Forms (Paid subscription – runs \$49.00 annually.)
9. Max Mega Menu
10. Name Directory
11. Page-List
12. Plugin Load Filter
13. Private Google Calendars
14. Recent Posts Widgets Extended
15. Recent Posts Widgets with Thumbnails
16. Schema
17. Schema Default Image
18. Site Kit by Google
19. Smash Balloon Instagram Feed
20. Smush
21. SOGO Add Script Header Footer
22. SVG Support
23. Video Pop-Up
24. WordPress Popular Posts
25. WP Activity Log
26. WP Activity Log for Gravity Forms
27. WP Logo Showcase Response Slider
28. WP Rocket (Paid subscription – runs \$49.00 annually.)
29. WP Tools Gravity Divi Module (Paid subscription – runs \$14.99 annually).
30. WP User Avatar
31. WP-SCSS
32. WP Front Notification Bar
33. Yoast Duplicate Post
34. Yoast SEO Premium (Paid subscription – runs \$89 annually.)

6.0 Domain Management

All ATTOM Website domain management and maintenance is handled exclusively by the ATTOM IT department, specifically Nihar Marfatia and Matt Shields. This includes all DNS records – such as A (host address), ALIAS (auto-resolved alias), CNAME (canonical name for alias), MX (mail exchange), NS (name server), and SOA (start of authority). These are critical records that integrate with both ATTOM company email and WP Engine hosting, CDN, and GES

Security – and must be managed solely by the ATTOM IT department. In addition, the attomdata.com secure socket layer (SSL) certificates are also managed by ATTOM IT via its enterprise GoDaddy account and are renewed solely by ATTOM IT.

7.0 Procedures and Protocol

Management and QA/QC of the ATTOM Websites follows a very defined and set protocol for additions, errors, and incidents as defined below.

7.1 Standard Website Additions and Updates

All planned website additions, updates, and improvements must follow a strict protocol. These are generally efforts that have been pre-planned by the ATTOM Marketing Department. Ticket Creation Date: The exact date the event was ticketed in Jira.

- Background: A two-sentence (maximum) description on what led to the ticket creation.
- Goal: The mission behind the ticket's creation, providing an end goal for its resolution.
- Scope: The defined activities that must be undertaken by the developer for resolution.
- Screenshot: Captures critical images that will aid the developer in the ticket's resolution.
- Pages Involved: The URLs of specific website pages, where work must be undertaken.
- Time Estimates: To include estimates for development, QA/QC, and total hours.
- Resources Involved: The individuals that will be actively working and resolving the ticket.
- Stakeholder Notification: Notifying the original requestor(s) of ticket completion.
- Due Date: The date that all development, review, and QA/QC will be completed.
- Ticket Priority: Each ticket must be noted with the level of priority (also tagged in Jira).

7.2 Low-Severity Website Incidents and Errors

All reported website corrections, errors, and incidents follow the same protocol as above, but may be routed to ATTOM Marketing from department and non-department employees and stakeholders. As these activities are reported to Kara Taylor, Executive Vice President, Julian Willis, Senior Website Product Manager, Karen Walsh, Contract Developer, or others within the ATTOM Marketing department, Mr. Willis will ticket the incident on the Jira Kanban board as soon as possible (ideally within one hour of notification).

Each Jira Kanban board ticket will provide the detail provided above – and require notification of Kara Taylor via email at kara.taylor@attomdata.com. Mid to high-severity incidents will follow a more heightened security procedure (provided in 6.2 below). Examples of low-severity website incidents include:

- a. Broken form submissions that prevent lead generation.
- b. Event, newsletter, and webinar errors/failures.
- c. Website page, menu, or image rendering failures.
- d. Broken links across critical website pages.
- e. Application, demo, and login errors or failures.

7.3 Mid- to High-Severity Website Incidents

All mid- to high-severity website incidents will follow all the protocols listed above but must be ticketed immediately in Jira (within 15 minutes of notification) – and must include immediate email notification of ATTOM IT, including Eric Ring, Nihar Marfatia, and Matt Shields via their ATTOM email: eric.ring@attomdata.com, nihar.marfatia@attomdata.com, and matt.shields@attomdata.com.

In addition, a ticket must also be submitted through the ATTOM Service Desk and submitted as a “Report a SEV1 Incident” via the following URL:
<https://attomdata.atlassian.net/servicedesk/customer/portal/1>.

A mid-to-high severity incident could have long-term effects on ATTOM’s business or affect critical systems. Examples include:

- a. Hacking of website systems or related applications.
- b. Loss or theft of confidential company information and credentials.
- c. Public website defacement.
- d. Sent spam or malicious bots that drastically degrade website performance.

8.0 Website Quality Assurance and Control

Quality assurance (QA) and quality control (QC) in web development are a set of activities and efforts undertaken to ensure that a website meets specified requirements, agreed-upon standards and procedures, and best practices. Before any standard website addition or update is finalized, it must be QA-ed and QC-ed moving forward by both automated and manual methods.

8.1 QA and QC Responsibilities

All QA and QC responsibilities (automated and manual) for the ATTOM website reside with the Senior Website Product Manager, Julian Willis. Mr. Willis will request minor QA and QC support from the two WordPress developers, as needed, across Jira tickets.

8.2 Website QA and QC Test Log

As with the “ATTOM Website Change Log,” starting Monday, March 8, 2021, we will create a dedicated home page for all automated and manual QA and QC efforts, which will include a daily change log, testing checklists, and all test reports.

8.3 Automated QA and QC Testing

ATTOM Marketing has recently onboarded BrowserStack, a leading QA and QC testing platform for websites to handle automated testing.

Starting on Monday, March 8th, 2021, we will begin running daily and weekly automated tests with BrowserStack. Because BrowserStack fully integrates with Atlassian and Jira, these tests can be captured in Confluence via an API token.

Five weekly tests that we plan to run include the following:

- a. Selenium Testing: Selenium is open-source software utilized by BrowserStack and competing services to cross-browser test medium to large websites (150-plus web pages) on both desktop browsers and iOS and Android devices. Selenium-based tests can be set to run on a daily or weekly basis. To start, we will implement a daily test to provide debugging across desktop and

mobile formats across at least 24 different desktop and mobile devices. BrowserStack provides a username and access key to incept testing, which will be configured and set to run the morning of March 8th. Results will be delivered to Confluence/BitBucket through an API token.

b. Visual Testing: Percy is BrowserStack's all-in-one visual testing and review platform that takes continual daily desktop and mobile screenshots across a website and captures bugs and also inconsistent UI/UX. All screenshots can then be reviewed and corrected for errors. Percy handles all asset discovery, rendering, and visual-change detection – and can be set to run against new web page deployments as well. Moving forward, we will employ Percy to run across the website daily, but also on all future new page launches to help QA these pages before they are pushed live. Percy integrates with BitBucket/Confluence and we can set up an API for Percy to transmit bugs and visual images starting Monday, March 8th.

c. BrowserStack Live: Live is like Selenium testing – but focused on potential user/visitor “interactions” (clicks and navigating) across a website.

d. BrowserStack Responsive Testing: This is a responsive testing tool that will significantly improve our ability to test current and future mobile UX design, alongside Divi Builder.

e. BrowserStack Auto SpeedTest: In addition to capturing regular weekly speed testing via Nasim's preferred platforms (Google Page Insights, GT Metrix, and WPEngine), BrowserStack provides speed testing across tens of browsers and devices. We will capture all four speed tests moving forward on a weekly basis.

8.4 ATTOM Manual QA and QC Testing

Starting Monday, March 8th, we will also schedule one day per week for manual QA and QC testing, to be performed by the Senior Website Product Manager. Manual testing, of course, is performed by a human being using a comprehensive checklist. Below is an example of a checklist that we will develop and launch for all manual testing.

a. Appearance

- Is the overall website look/feel displaying as intended?
- Are all hyperlink colors consistent?
- Are all field and background colors consistent?
- Are buttons displayed in standard format and size?
- Do pages print legibly without cutting off text and images?

b. Images

- Are all images aligned on the web page?
- Are all images the same size and downloading at the same speed?
- Are all the button graphics matching throughout the page and website?
- Does text wrap properly around pictures/graphics?

c. Navigation

- Does the primary and footer navigation work as intended?
- Do all inter-page links work correctly and link to the right destination?

- Are all menus and links rendering correctly and easily clickable?

d: Content

- Are font size and style consistent within each page and across pages?
- Are all text and image combinations aligned properly?
- Are all page and content headings aligned and presenting correctly/consistently?
- Is the text in the page displayed in the right case (sentence case or all caps)?
- Are all words, phrases, and sentences spelled correctly with consistent punctuation?
- Are all content section boxes created with appropriate padding, margin, and sizing?
- Do all pages possess perfect readability on different screen resolutions?
- When rotating a mobile or tablet, does all content rotate and display correctly?

f: Forms

- Do all default values populate in the correct fields (Gravity and Pardot)?
- Do all dropdown selections populate as required (Pardot)?
- Are all required fields preventing form submission if not provided (Gravity and Pardot)?
- Are all notifications being delivered to the correct parties (Gravity and Pardot)?

g. WordPress Plugins

- Are all plugins functioning correctly and displaying correctly on page?
- Are all plugins being updated appropriately on the same day each week?
- Are there any alerts in WordPress regarding bugs on any of our plugins?

h. Google Tag Manager

- Are all tracking codes and pixels captured within Google Tag Manager (GTM)?
- Are we running the Google Tag Manager debugging tool at least once per week?
- Do any recently onboarded applications or tools have tracking codes for GTM?