

ILLINOIS STATE POLICE
Office of the Statewide 9-1-1 Administrator



State of Illinois

Application for
9-1-1 Modification Plan

VERIFICATION

I, Christiane Harding, first being duly sworn upon oath, depose and say that I am Executive Director, of QuadCom 911; that I have read the foregoing plan by me subscribed and know the contents thereof; that said contents are true in substance and in fact, except as to those matters stated upon information and belief, and as to those, I believe same to be true.

Christiane M Harding

Christiane M Harding

Subscribed and sworn to before me

this 13 day of September, 20 22.

Oneida Fehring

NOTARY PUBLIC, ILLINOIS



**9-1-1 SYSTEM PROVIDER
LETTER OF INTENT**

09/13/2022

(Date)

Ms. Lisa Wirtanen

(9-1-1 System Provider Company Representative)

AT&T

(9-1-1 System Provider Company Name)

4918 W. 95th Street

(Street Address)

Oak Lawn, IL 60453

(City, State, Zip Code)

Dear Ms. Wirtanen _____:

This letter is to confirm our intent to modify our 9-1-1 System. Enclosed is your copy of our modification plan to be filed with the Department of the Illinois State Police for approval. Thank you for your assistance in this matter.

Sincerely,

Christiane M. Harding

(Name) *Christiane Harding*
(Title) *Executive Director*

enclosure: Modification Plan

NARRATIVE STATEMENT:

(Provide a detailed summary of system operations for a modified 9-1-1 plan. Also, if incorporating an NG9-1-1 solution, please include the additional items listed below pursuant to 1325.205 b)12).

- 1) Indicate the name of the certified 9-1-1 system provider being utilized.
- 2) Explain the national standards, protocols and/or operating measures that will be followed.
- 3) Explain what measures have been taken to create a robust, reliable and diverse/redundant network and whether other 9-1-1 Authorities will be sharing the equipment.
- 4) Explain how the existing 9-1-1 traditional legacy wireline, wireless and VoIP network, along with the databases, will interface and/or be transitioned into the NG9-1-1 system.
- 5) Explain how split exchanges will be handled.
- 6) Explain how the databases will be maintained and how address errors will be corrected and updated on a continuing basis.
- 7) Explain who will be responsible for updating and maintaining the data, at a minimum on a daily basis Monday through Friday.
- 8) Explain what security measures will be placed on the IP 9-1-1 network and equipment to safeguard it from malicious attacks or threats to the system operation and what level of confidentiality will be placed on the system in order to keep unauthorized individuals from accessing it.

Plan Narrative:

The QuadCom Public Safety Communications System (QuadCom 911) is transitioning from E9-1-1 to Next Generation 9-1-1 (NG911). AT&T is the 9-1-1 System Provider ("SSP").

The QuadCom Public Safety Communications System will comply with all Federal and State laws and with National Emergency Number Association Standards (NENA) that pertain to NG911 including the NENA i3 Standard for Next Generation - NENA-STA-010.3a.2021.

The State of Illinois has selected AT&T to provide a statewide Next Generation 9-1-1 System. AT&T's ESInet combines AT&T's network capabilities with technology from Intrado Life & Safety, Inc (Intrado). The AT&T ESInet solution will facilitate an efficient transition from legacy 9-1-1 networks to networks capable of supporting the growing demands of a mobile society. With AT&T ESInet, the State is taking advantage of AT&T's investment in pre-built, cloud-based solution that delivers next-generation functionality. AT&T is also providing their industry-leading AT&T VPN MPLS network for primary access to all PSAPs.

AT&T ESInet solution is a combination of their IP network and Next Gen Core Service (NGCS) components that includes industry leading SLAs, management services and tools to help ensure that they provide the best possible service.

The design is based on building redundant systems to avoid any single point of failure (SPOF) in the routing of calls. The ESInet being deployed has all PSAPs connected and can route calls based on not only location, but also by availability. In a Next Generation solution, a call will be answered through Intelligent routing. Additionally, there will be more available positions to answer calls because all connected and tested PSAPs will be technically able to answer the call and will be able to dispatch or transfer the call to another PSAP.

AT&T's ESInet defense-in-depth security is built into the architecture. AT&T's Global IP network is monitored by 8 different Security Operations Center (SOC) facilities located across the world. AT&T uses its security portfolio capabilities to protect their data centers and networks.

AT&T's ESInet provides six (6) geographically divers and fully redundant facilities to increase resiliency and survivability in natural and man-made disaster scenarios, with scalable capacity capable of supporting more than twice the 9-1-1 busy hour call for the entire United States. AT&T has documented business continuity and restoration plans, including complex disaster and evacuation contingencies. The 24x7 operations center employs an Incident Handling process modeled on FEMA's Incident Command System, with notification built into the process.

Plan Narrative:

The ESInet is monitored 24x7x365 from a NOC with a tier 2 and tier 3 technical resources dedicated to the AT&T ESInet. AT&T's 9-1-1 Resolution Center has dedicated public safety resources.

The AT&T ESInet provides a flexible routing platform that supports both ESN (tabular) and GIS (spatial) routing on the same Emergency Call Routing Function (ECRF).

The AT&T ESInet solution will interconnect to legacy selective routers as defined per NENA standards. AT&T provides redundant, public safety grade points of presence in each LATA for OSP ingress locations for Legacy Network Gateways (LNGs).

AT&T will interconnect to Legacy Selective Routers to transfer and/or receive calls with Automatic Number Identification (ANI) and Automatic Location Identification (ALI) information to the State's NGCS via legacy means through the Legacy Selective Router Gateway (LSRG). Interconnections will also allow legacy PSAPs served by legacy selective routers to serve as the abandonment route for PSAPs served by the AT&T ESInet solution.

Connectivity extends beyond the internal ESInet transport to external network and OSP interfaces. The ESInet supports both TDM and IP OSP ingress at geographically distributed Points of Interconnection (POI's). The ESInet supports standards-based protocol interfaces to external ESInets for call hand-off and call transfers. With pre-established connectivity capabilities, PSAPs on the ESInet have the ability to transfer calls to PSAPs on other ESInets or PSAPs that have not yet transitioned off legacy selective routers.

AT&T will coordinate getting the OSPs records into the AT&T ESInet database. AT&T will also jointly plan the interconnecting network with the OSP. Circuits will be ordered and implemented between the SOP and the ESInet POI. The ESInet POI may reside in an AT&T office or hub. AT&T will cooperatively test and turn up all trunking arrangements with the SOP. Traffic migrations from the legacy to new AT&T infrastructure will follow.

Integrated Text-to-911 is supported by the ESInet.

AT&T is responsible for negotiating interconnection agreements and trunking arrangements with each service provider. Interconnection agreements will include the roles and responsibilities of the Parties related to the exchange of 9-1-1 traffic including but not limited to, split rate centers, tandem to tandem and IP connections.

GIS data is submitted to the AT&T ESInet via a web-based spatial interface (SI) portal. The portal provides secure GIS file transfer, 9-1-1 Authorities can maintain their local database schema and configure database changes using attribute field mapping tools.

The Spatial Interface (SI) validation engine logs errors and refers errors back to the originating 9-1-1 Authority in comprehensive reports that are retrieved in the 9-1-1 Enterprise Geospatial Database Management System (9-1-1 EGDMS). Validation errors are corrected by the 9-1-1 Authority within their own GIS database. Updates are submitted and processed on an on-going basis.

AT&T's ESInet cyber security policies, standards, and guidelines are consistent with industry best practices as defined by International Organization for Standardization and Control Objectives for Information and related Technology. The AT&T ESInet is highly secure, privately managed IP network providing IP based call routing services for next generation 9-1-1 call delivery. All inbound and outbound traffic interactions are with pre-authorized entities, utilize agreed upon protocols and traverse controlled access points. Call processing and real-time data delivery are protected through both physical and logical controls.

Sensitive data resides in trusted data centers that employ logical and physical access controls. All hardware and software elements deployed in a production environment go through stringent release management processes that incorporate thorough penetration scan testing. Corporate and development environments are separate from production and are not used in development or system test environments. Inter-zone traffic is restricted to only that of authorized personnel and the necessary protocols destinations used to support the management and applications of the ESInet with all other traffic implicitly denied by way of redundant and divers Session Border Controllers (SBC) and stateful firewalls.

A Network Operations Center (NOC) staffed 24 hours a day, seven days a week, 365 days a year to actively monitor and manage the AT&T ESInet end-to-end service is provided. When a potential or actual Customer-affecting issue is detected, the Incident Administration team is engaged by the NOC. The team uses established processes that are ISO 9001:2008-compliant for immediate escalation, notification, resolution, and reporting. All buildings, NOC and Data Center access are monitored by 24x7 security and access control systems.

QuadCom Public Safety Communications System will be maintaining the current backup configuration. QuadCom 911 center is fully backed up by Elgin 911 and Elgin 911 is fully backed up by QuadCom 911. Elgin 911 automatically receives QuadCom's overflow 911 calls and QuadCom receives Elgin's overflow 911 calls.

QuadCom has been using text-to-911 through Comtech's GEM9-1-1 solution. Text-to-911 began at QuadCom in March of 2016. At this time, only texts received within QuadCom's boundaries are routed to QuadCom. In 2020, QuadCom signed an agreement to become text-to-911 capable through the Motorola VESTA 911 solution upon grade to version 7.7.

FINANCIAL INFORMATION

Annual recurring 9-1-1 network costs prior to modification	\$ _____	\$ 0.00
Projected annual recurring 9-1-1 network costs after modification	\$ _____	TBD
Installation cost of the project	\$ _____	TBD
Anticipated annual revenues	\$ _____	\$ 0.00

FIVE YEAR STRATEGIC PLAN FOR MODIFIED PLAN

(Provide a detailed summary of the proposed system's operation, including but not limited to, a five-year strategic plan for implementation of the modified 9-1-1 plan with financial projections)

Narrative:

N/A

ATTACHMENTS

Ordinance - The local ordinance which created an ETSB prior to January 1, 2016.

Contracts - The contract for a new 9-1-1 system provider or for NG 9-1-1 service.

Intergovernmental Agreement

Back-up PSAP Agreement - The agreement that establishes back-up service due to interruptions or overflow services between PSAPs.

Network Diagram - Diagram provided by the 9-1-1 System Provider. Re-evaluate P.01 grade of Service for cost savings and network efficiency.

TEST PLAN DESCRIPTION

1) Description of test plan (back-up, overflow, failure, database).

QuadCom's back-up and overflow is Elgin Communications - No Changes to current plan
Elgin's back-up and overflow is QuadCom - No Changes to current plan

2) List wireline exchanges to be tested.

Lombard switch
Geneva switch

3) List of wireless and VoIP Carriers to be tested.

AT&T
Verizon
T-Mobile
Comcast
Intrado
Various others

Test Plan Description i3

TEST #	TEST CASE	TYPE
1	Trunk Verification (SIP)	Call Routing
2	Trunk Verification (SS7 Ingress from LSR)	Call Routing
3	Trunk Verification (SS7 Egress from AGC to LSR)	Call Routing
4	Perform reboot and validation on each AT&T network edge router at PSAP	Failover test
5	Perform WAN interface shutdown and validation on each AT&T network edge router at PSAP	Failover
6	Perform reboot and validation on each ATT Interface Router (between CPE and AT&T router)	
7	Wireline Call Routed to PSAP through AT&T ESInet	Equipment
8	Wireless Call Routed to PSAP through AT&T Esinet	Equipment
9	VOIP Call Routed to PSAP through AT&T ESInet	Equipment
10	CPE bids i3 Components	Call Handling
11	i3 Routing Fails, Routing via SRDB for Wireline call	Call Routing
12	i3 Routing via ECRF for Wireline call	Call Routing
13	i3 Transfer: Fixed Bridge Conferencing Confirmation (Call to IP PSAP then bridge to i3 PSAP if available – willing PSAP)	Call Handling
14	S/R Transfer: Selective Bridge Conferencing Confirmation, if used by the PSAP	Call Handling
15	S/R Transfer: Fixed Bridge Conferencing Confirmation	Call Handling
16	S/R Transfer: Fixed Bridge Conferencing Confirmation	Call Handling
17	PSTN Transfer: Fixed Bridge Conferencing Confirmation	Call Handling
18	Manual Transfer to valid local TN	Call Handling
19	Manual conference bridging to invalid unassigned number	Call Handling
20	Manual conference bridging to a valid 8YY number	Call Handling
21	Manual conference bridging to a valid Busy number	Call Handling
22	Manual conference bridging to a Multi-Party Conference	Call Handling
23	Manual conference bridging to a valid long-distance cell	Call Handling
24	Alternate Routing	Call Routing
25	Ring no Answer Timer	Call Routing
26	No position Logged In	Call Routing
27	Abandonment Routing	Call Routing
28	Un-Abandonment Routing	Call Routing
29	Abandonment Routing – PAD Testing (if PAD available)	Call Routing
30	Un-Abandonment Routing – PAD Testing (if PAD available)	Call Routing
31	Test line appearances that appear on each CPE	Call Processing
32	TTY call	Call Handling
33	TTY conference call	Call Handling

QUADCOM 
POLICE & FIRE COMMUNICATIONS SYSTEM
 505 ELM RIDGE ROAD
 CARPENTERSVILLE, ILLINOIS 60110-2063
 (847) 428-8784

Christiane Harding, Director

Algonquin Police Department	2200 Harnish Drive	Algonquin	IL	60102
Algonquin/Lake in the Hills F.P.D.	1020 West Algonquin Road	Lake in the Hills	IL	60156
Barrington Fire Department	400 N Northwest Hwy	Barrington	IL	60010
Barrington Hills Police Department	112 Algonquin Road	Barrington Hills	IL	60010
Barrington Police Department	400 N Northwest Hwy	Barrington	IL	60010
Carpentersville Fire Department	213 Spring Street	Carpentersville	IL	60110
Carpentersville Police Department	1200 L.W. Besinger Dr	Carpentersville	IL	60110
Cook County Sheriff's Department	1401 S Maybrook Drive	Maywood	IL	60153
East Dundee Fire Protection District	401 Dundee Ave	East Dundee	IL	60118
East Dundee Police Department	115 E Third St	East Dundee	IL	60118
Elgin Fire Department	550 Summit Street	Elgin	IL	60120
Elgin Police Department	151 Douglas Ave	Elgin	IL	60120
Hoffman Estates Police Department	411 W Higgins Rd	Hoffman Estates	IL	60169
Hoffman Estates Fire Department	1900 Hassell Rd	Hoffman Estates	IL	60169
Huntley Fire Protection District	11808 Coral Street	Huntley	IL	60142
Kane County Sheriff's Department	32W755 IL Rte. 38, Suite A	St Charles	IL	60175
Lake County ETSB	1300 S Gilmer Rd	Volo	IL	60073
McHenry County Sheriff's Department	220 N Seminary	Woodstock	IL	60098
Rutland Dundee F.P.D.	P.O.Box 203	Gilberts	IL	60136
Sleepy Hollow Police Department	1 Thorobred Ln	Sleepy Hollow	IL	60118
South Barrington Police Department	30 S Barrington Rd	South Barrington	IL	60010
West Dundee Fire Department	100 Carrington Dr	West Dundee	IL	60118
West Dundee Police Department	555 S 8 th Street	West Dundee	IL	60118

Certified Mail receipts on file

**INTERGOVERNMENTAL AGREEMENT BETWEEN
QUADCOM AND THE CITY OF ELGIN
FOR BACKUP EMERGENCY COMMUNICATIONS**

THIS AGREEMENT is hereby made and entered into this 29th day of February, 2012, by and between the City of Elgin, Illinois, a municipal corporation (hereinafter referred to as "Elgin"), and the QuadCom Regional Communications Center, an Illinois intergovernmental agency, on behalf of its member agencies (hereinafter referred to as "QuadCom").

WHEREAS, QuadCom was created by an intergovernmental agreement and provides communications and dispatching services for a number of law enforcement, fire and emergency medical service agencies; and

WHEREAS, Elgin provides emergency communications and dispatching services for the Elgin Police Department and Elgin Fire Department; and

WHEREAS, QuadCom and Elgin are each Public Safety Answering Points ("PSAPs") for purposes of the E9-1-1 system, which requires that each PSAP have a backup agency to provide emergency communications and dispatch services in the event of a disruption in the PSAP's abilities to provide those services at its own primary facility; and

WHEREAS, in order to ensure continuity of emergency communications and dispatch services in the event that QuadCom or Elgin is unable to provide services due to an emergency such as fire, flood, earthquake, attack, equipment malfunction or any other such cause, QuadCom and Elgin have agreed to serve as backup facilities for each other until services can be restored; and

WHEREAS, the parties wish to set forth their agreement in writing and the parties have authority to enter into intergovernmental agreements for this purpose under 5 ILCS 220 of the Illinois Compiled Statutes.

NOW, THEREFORE, in consideration of the mutual benefits to be derived under this Agreement and the promises and agreements contained herein, the parties hereto agree as follows:

1. **Recitals**: The above recitals are hereby incorporated into this Agreement and made a part hereof as if fully recited herein.
2. **Purpose**: The purpose of this Agreement is to ensure the continuity of emergency communications and the response to 9-1-1 calls during periods of emergency in which one of the parties is temporarily unable to provide for its own communications at its own primary facility. Under this Agreement, each party will temporarily provide emergency communications service on the other party's behalf and will provide space within its communications facilities for the other party to operate emergency communications until normal service can be restored.
3. **Space and Improvements at QuadCom**: QuadCom shall provide space at its communications center at 505 Elm Ridge in the Village of Carpentersville, Illinois, for a backup communications center for use by Elgin. It is not anticipated that any significant improvements to the space will be required for Elgin's use. In the event

that improvements are required, QuadCom and Elgin will agree on the scope of the improvements and construction or installation. Any furnishings or equipment required by Elgin will be the sole responsibility of Elgin to procure and install.

4. **Space and Improvements at Elgin:** Elgin shall provide space at its communications center at 151 Douglas Avenue in the City of Elgin, Illinois, for a backup communications center for use by QuadCom. It is not anticipated that any significant improvements to the space will be required for QuadCom's use. In the event that improvements are required, Elgin and QuadCom will agree on the scope of the improvements and construction or installation. Any furnishings or equipment required by QuadCom will be the sole responsibility of QuadCom to procure and install.
5. **Use of Space Not Exclusive:** Each party retains the right to use the space in its facility provided to the other party during times when the space is not needed for backup emergency communications. Each party shall take reasonable care to avoid damaging the other party's furnishings and equipment and shall be liable for any damage sustained during that party's use.
6. **Backup Communications Service:** In the event an emergency occurs that results in the inability of either party to provide emergency communications and response to 9-1-1 calls at its own facilities, backup communications service shall be provided as follows:
 - a. The initiating party will contact the backup party to advise the backup party of the need for services. The backup party shall advise the initiating party of the backup party's ability to provide the services and, if the backup party is in a position to do so, all emergency communications services for the initiating party shall be switched to the backup party. Upon switchover, the backup party shall, to the extent of its abilities and resources, temporarily provide emergency communications services consisting of the following:
 - i. Receiving 9-1-1 calls and routine calls for police, fire and medical services agencies served by the initiating party; and
 - ii. Directing a response to said calls by either dispatching the appropriate emergency police, fire or medical unit or forwarding the call to the appropriate agency for response; and
 - iii. Providing ongoing communications support to personnel in the field.
 - b. The services provided under subsection (a) shall be provided until such time as communications personnel from the initiating party: (1) arrives at the backup party's facility to assist in handling calls for service; and/or (2) make the backup communications facility of the initiating party operational. At such time as the backup communications facility is operational, the initiating party shall notify the backup party, and emergency communications shall be switched over to the initiating party's backup facility.

- c. Upon restoration of normal emergency communications services at the initiating party's primary facility, communications shall be switched back to the primary facility, and the use of the backup facility will cease.
 - d. It is understood that each party to this Agreement has finite resources and that backup communications services may not be able to be provided under all circumstances. It is also understood that the backup party may not be able to provide service at the same level as the initiating party during the temporary service period. Neither party hereto makes any guarantees or warranties of any kind to the other regarding the availability or level of service.
7. **Responsibility for Costs:** Except as expressly provided in Sections 3 and 4 above, each party shall be solely responsible for its own costs in providing the services and fulfilling the terms of this Agreement.
 8. **Property:** No real or personal property shall be acquired jointly by the parties hereto. All improvements to building space made pursuant to Sections 3 and 4 above shall become the property of the building owner, except that trade fixtures, furnishings and equipment that can be removed without causing damage to the building may be removed by the party at whose cost they were purchased or installed.
 9. **Indemnity:** Each party shall indemnify, defend and hold harmless the other party, its officers, officials, employees, agents and volunteer harmless from any and all claims, injuries, damages, losses or suits, including attorney's fees, arising out of the acts, errors or omissions of the indemnifying party, its officers, officials, employees, agents and volunteers in the performance of its obligations under this Agreement, except to the extent the injuries or damages were caused by the indemnified party. The provisions of this paragraph shall survive any expiration or termination of this Agreement.
 10. **Insurance:** Each party shall be responsible for maintaining its own liability and property insurance against losses or liability related to this Agreement.
 11. **No Third Party Beneficiaries:** There are no third party beneficiaries to this Agreement. No person or entity other than a party to this Agreement shall have any rights hereunder or any authority to enforce its provisions and any such rights or enforcement must be consistent with and subject to the terms of this Agreement. This Agreement shall not be construed so as to create any special duty to any entity not a party to this Agreement.
 12. **Duration – Termination:** This Agreement shall remain in effect unless terminated by either party pursuant to this Section. Either party may terminate this Agreement upon ninety (90) days written notice to the other party for any reason without penalty. No later than the 90th day following the notice of termination, each party hereto shall remove its trade fixtures, furnishings and equipment from the backup space provided by the other party hereto.
 13. **Notices:** Notice of the need for backup services under Section 5 of this Agreement will be in person, by telephone or by such other means as may be reasonably used to

apprise the backup party of the initiating party's need for services. All other notices under this Agreement, with the exception of equipment testing, shall be given in writing, addressed to the following persons:

To QuadCom:
Director
QuadCom Elgin
505 Elm Ridge
Carpentersville, IL 60110

To Elgin:
Chief of Police
City of Elgin Police Department
151 Douglas Avenue
Elgin, IL 60120

With a copy to:
City of Elgin
Legal Department
150 Dexter Court
Elgin, IL 60120

Written notices shall be deemed received three (3) days after the same are deposited in the United States Mail, postage prepared, addressed as provided above.

14. **Administration:** No separate legal or administrative entity is created by this Agreement. The Director of QuadCom and the Chief of Police of Elgin will jointly administer this Agreement.
15. **Immunities:** It is agreed and understood that the services to be provided pursuant to this Agreement are intended to be the same services generally available to the general public and that no additional legal obligations or duties are intended or shall be construed to have been created by this Agreement. It is further understood and agreed that this Agreement is not intended nor shall be construed to alter, limit or constitute a waiver of any of the civil immunities afforded to the City and/or QuadCom pursuant to the Local Governmental and Governmental Employees Tort Immunity Act at 745 ILCS 10/1-101 *et seq.*, as amended; the Emergency Telephone System Act at 50 ILCS 750/0.01 *et seq.*, as amended; the Emergency Medical Services Systems Act at 210 ILCS 50/1 *et seq.*, as amended; and/or otherwise provided by law, it being agreed that all of the civil immunities as set forth in such Acts, as amended, and/or otherwise provided by law, shall fully apply to any and all claims asserted or which might be asserted against the City and/or QuadCom and/or their respective officials, officers, employees and/or agents as a result of this Agreement or any of the actions of the parties pursuant to this Agreement. Without limiting the foregoing and notwithstanding anything to the contrary in this Agreement, it is agreed and understood that no third-party beneficiaries are intended to be created by the provisions of this Agreement and it is the intention of the parties hereto that no action may be commenced by any person or entity against the City and/or QuadCom and/or their respective officials, officers, employees, agents and/or other related persons or entities for monetary damages for any alleged breach or failure to provide services described in this Agreement.
16. **Severability:** If any section, sentence, clause or phrase of this Agreement is held to be invalid, unconstitutional or otherwise unenforceable by a court of competent jurisdiction, such invalidity, unconstitutionality or unenforceability shall not affect

the validity, constitutionality or enforceability of any other section, sentence, clause or phrase of this Agreement.

17. **Entire Agreement:** This Agreement represents the entire understanding and agreement of the parties concerning its subject matter and supersedes all prior discussions and understandings. This Agreement may be modified only by written instrument signed by both parties.

IN WITNESS WHEREOF, this Agreement has been executed by each party on the date set forth below:

QuadCom Regional Communications Center

City of Elgin

By: 
Stephen Pickett, Chairman
QuadCom Board of Directors

By: 
David Kaptain, Mayor

ATTEST


Kim Dewis, City Clerk

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