

**IN THE SUPERIOR COURT OF JUDICATURE,
IN THE HIGH COURT OF JUSTICE,
ACCRA - A.D. 2016**

SUIT NO:

- 1. JACOB OSEI YEBOAH (JOY) - 1ST APPLICANT**
NO. 7, SENCHI STREET,
AIRPORT RES. AREA, ACCRA.
- 2. JOINT ALLIANCE YOUTH MOVEMENT - 2ND APPLICANT**
(A CIVIL SOCIETY ORGANIZATION)
NO. 43, BLOCK D, OKYEREKROM,
FUMESUA, NR. EJISU, KUMASI.
- 3. MACHO MEN FOR GOOD & JUSTICE - 3RD. APPLICANT**
(A NON PROFIT ORGANIZATION [NGO])
ADUM, WITHIN STAMBIC BANK COMPLEX,
KUMASI.

VERSUS

ELECTORAL COMMISSION (EC) - RESPONDENT
RIDGE, ACCRA

**NOTICE OF MOTION SEEKING JUDICIAL REVIEW IN THE NATURE
OF AN ORDER OF MANDAMUS Or. 55 R1**

TAKE NOTICE that this court will be moved by Counsel for the Applicants herein praying this Honourable Court to apply for an order of Mandamus in the terms set forth in the accompanying affidavit.

And for such other order/s as this Honourable Court may deem fit.

Court to be moved on the day of 2016 at 9 O'clock in the forenoon or so soon thereafter as counsel for the Applicants may be heard.

Dated at Accra thisday of 2016.

.....
PETER KWAKU NTI, ESQ.
SOLICITOR FOR APPLICANTS

PETER KWAKU NTI, ESQ.
(BARRISTER & SOLICITOR, SUPREME COURT OF GHANA)
KWAKU NTI LAW CONSULT, "DIDA CHAMBERS"
H/No. MDN. 603, AKOSOMBO JUNC.NEW RD. MADINA-ACCRA
POB GP. 2518, ACCRA-GHANA. CELL: 0244462034
LIC. No. GAR.11563/16....CHAMBER: PP.0000289/15

THE REGISTRAR
HIGH COURT OF GHANA
ACCRA

COPY FOR SERVICE ON THE RESPONDENT

**IN THE SUPERIOR COURT OF JUDICATURE
IN THE HIGH COURT OF JUSTICE
ACCRA - A.D. 2016**

SUIT NO:

- 1. JACOB OSEI YEBOAH (JOY) - 1ST APPLICANT**
NO. 7, SENCHI STREET,
AIRPORT RES. AREA, ACCRA.
- 2. JOINT ALLIANCE YOUTH MOVEMENT - - 2ND APPLICANT**
(A CIVIL SOCIETY ORGANIZATION)
NO. 43, BLIOCK D, OKYEREKROM,
FUMESUA, NR. EJISU, KUMASI.
- 3. MACHO MEN FOR GOOD & JUSTICE.....-3RD APPLICANT**
(A NON PROFIT ORGANIZATION [NGO])
ADUM, WITHIN STANBIC BANK COMPLEX,
KUMASI.

VERSUS

ELECTORAL COMMISSION (EC) - RESPONDENT
RIDGE, ACCRA

AFFIDAVIT IN SUPPORT

I, JACOB OSEI YEBOAH (JOY), the 2012 INDEPENDENT PRESIDENTIAL CANDIDATE, and an Electrical Engineer involved in Biometric Identity Management, and Technology Ambassador, Future Africa Foundation, USA, with offices at Airport residential area of Accra in the Greater Accra Region of the Republic of Ghana make Oath and say as follows:

1. That I am the 1st Applicant and Deponent herein.

2. That I have the authority and consent of the 2nd and 3rd Applicants to depose to these matters which are within my personal knowledge, information and belief.
3. That the Respondent is a statutory body established under the 1992 Constitution to regulate the electoral processes in Ghana, register voters in accordance with laid down principles, both at the local, district, regional and National levels.
4. That the Respondent is mandated by the Constitution to have direct oversight to the organisation of Political Parties (PP) and to ensure compliance to PP Law.
5. That the nation has spent or invested considerable resources in a Biometric Technology application to achieve a credible biometric Voter register.
6. That a credible Biometric Voter Register (BVR) will ensure and positively reinforce the nation's declaration and belief in Universal adult Suffrage.
7. That a credible BVR will ensure a safety situation of free and fair Elections.
8. That the work of Respondent is specifically guided by a law designated REGISTRATION OF VOTERS REGULATIONS, 2016 (CI 91)
9. That CI 91 is the law intended to regulate the creation of credible biometric voters register (BVR)
10. That the law in its present form is inadequate for the work it was designed CI91 R23 (2a) reads: “ (2) *During the exhibition period; (a) any registered voter may inspect the provisional register of voters to ascertain that the particulars on the voter's identification card are the same as the particulars contained in the provisional register of voters and in case of any discrepancy, request the exhibition officer to make the necessary correction in the provisional register.*”
11. That what is found to be inadequate is the absence of a finger print identification of a voter; which alone can achieve valid votes for a credible BVR.
12. That it is the Respondent who alone is mandated to put forward proposals

for amendment before Parliament to effect change or amend for the law to be adequate or effective.

13. That an amendment is being proposed to read as follows:
“Any existing registered voter who intends to cast his/her vote for impending elections (a) During the exhibition period (i) Shall place his/her fingers on the Automatic Finger Identification System (AFIS) in the presence of the Exhibition Officer and other stakeholders to ascertain that the particulars on the Voter’s Identification Card are the same as the particulars contained in the provisional register of voters (ii) The Exhibition Officer in the presence of other stakeholders will ascertain the facial and personal data of the Voter both on the AFIS and Voter’s Identification Card (iii) In case of any discrepancy, the Voter will request the Exhibition Officer to make the necessary correction in the provisional register”.
14. That this said, any intended voter must be required to verify his/her identity during exhibition period; and any “undesirables” (minors, deceased, foreigners etc.) eliminated from The BVR.
15. That it is undeniable fact that any technology wrongly applied could equally spell doom to beneficiaries, the good people of Ghana.
16. **That, a Credible BVR for elections, simply put, means, a register of Voters using the Biometrics of Voters, to identify a (living) Voter and his/her location in order to ascertain valid votes cast in an election. This by implication means a credible BVR must have the barest minimum of the dead in order to build confidence in the number of valid votes cast by the living at the respective locations/polling stations. This is inherent in the natural phenomenon of Death and Movement associated with humans.**
17. That CI 91 has no Regulations to challenge the participation of the dead/deceased in our electoral process; and require the deletion of same from the BVR. It is estimated from Ghana Statistical Services figure that the dead comprise approximately 4.5% of the Voters population.
18. That the existence of the deceased estimated to be 4.5% of the voters’ population thus renders the BVR **to be NOT** credible: the reason being that since no Presidential Candidates from 2004 elections has won by more than

a margin of 4.5% above the 50% mark, (and have variously won by an average of 1.13%) with a standard deviation of 0.96.

19. That thus, with 4.5% of the voters being deceased and not removed from the BVR, there is the high probability that the dead voters have been deciding election results; hence the need to order their removal.
20. That if the suggested amendment in paragraph 13 is not effected to eliminate the deceased from the BVR, using manual verification in the case of malfunctioning of the Biometric Verification Devices, (BVDs) will create chaos at all polling stations.
21. That any intended electoral process by the Respondent, including Electronic Transmission of Polling Results must be incorporated and backed by a Constitutional Instrument (CI) for the 2016 elections.
22. That the polling station registration statistics, showed on the website of Respondent (<http://www.ec.gov.gh/register/registration-statistics.html>) the existence of only 28,921 polling stations, short by 79 polling stations as against the publicised 29,000.
23. That this honourable Court is prayed to compel the Respondent to be alive to its duties, to put the biometric technology to appropriate, lawful use in order to create a credible BVR for the general elections scheduled for 7th December 2016.

ENFORCEMENT, THE POLITICAL PARTIES LAW, ACT 574 OF 2000

24. That the Respondent in a letter on 5th April, 2016 reminded all PP to comply with the PP law, Act 574 Sections 21(1), 14(2) and 15(1) by 31st May, 2016.
25. That there is shown to me and marked exhibit, JOY-1, copy of letter referred to above.
26. That the Daily Graphic newspaper of 2nd June, 2016, and marked exhibit (JOY-2), headline interview with the EC official showed that only seven (7) out of the estimated twenty six (26) PP had attempted meeting the

constitutional requirement of two-third offices in all 216 districts (Article 55, 7b) in Ghana and Submission of audited accounts (Article 55, 14a&b)

27. That the Respondent has admittedly failed to ensure compliance to its own letter above (JOY-1). These sections are well engraved in the 1992 Constitution Article 7(b), 14(a) and 14(b): and it is only the considerable force of this honourable court that can compel compliance by insisting the Respondent carry out its mandate.
28. That again, the Respondent has in a response letter to the lawyer of the Plaintiff, marked exhibit JOY-3, stated “Political Parties must be educated adequately on their obligations under the law and a sanction regime must be put in place backed by statute prior to enforcement”.
29. That the Respondent has by the above response (JOY-3), not demonstrated that it has the moral strength to enforce the law that is so patent; Respondent should not also be heard to give the excuse that there are no sanctions in PP Law Act 527 of 2000.
30. Wherefore there is the outmost urgency to compel the Respondent to take action to ensure compliance to the PP law, in order to bring great reformation and sanity in the behaviour of PP for the safety and authentic co-existence of citizens before, during and after the impending elections in December 2016.
31. Wherefore, we pray for the following reliefs (under paragraphs 1-23),
 - a) An order to compel Respondent to delete the deceased, minors and any “undesirables” through Exhibition Verification process.
 - b) An order to compel Respondent to initiate steps to amend the CI91, R23 (2a) as suggested in our paragraph 13 above and to do so within a reasonable time before the 7th December, 2016 elections.
 - c) An order to compel the Respondent to re-open/extend the Exhibition for another Seven (7) days to give opportunity for intended Voters to verify their names in order to cast their votes for the December 7th, 2016 elections.

- d) An order to compel Respondent to incorporate any intended electoral reform process to be backed by CI, especially Electronic Transmission of Polling Results.
- e) An order to compel the Respondent to provide the details of all Elections Officers and their Voter ID in all the 29,000 polling stations to be advertised in the Daily Graphic newspaper two weeks before the elections.

Relief sought under paragraph 24-30, An Order to compel the Respondent to enforce compliance with,

f) PP law, Act 574 Sections 14(2), 15(1) and 21(1), more especially 15(1): which reads that, "Within ninety days after the issue to it of a final certificate of registration, a political party shall furnish the Commission with details of the existence and location of its national, regional, district and constituency offices" and

21(1): which reads "A political party shall, within six months from 31st December of each year, file with the Commission (b) audited accounts of the party for the year."

Or suffer the penalty for noncompliance.

Wherefore I swear to this affidavit in support of the Motion to bring an Application for an Order of Mandamus against the Respondent.

SWORN AT ACCRA.....THEDAY OF2016.

DEPONENT

BEFORE ME

COMMISSIONER FOR OATHS

**IN THE SUPERIOR COURT OF JUDICATURE
IN THE HIGH COURT OF JUSTICE
ACCRA - A.D. 2016**

SUIT NO:

- 1. JACOB OSEI YEBOAH (JOY) - 1ST APPLICANT**
NO. 7, SENCHI STREET,
AIRPORT RES. AREA, ACCRA.
- 2. JOINT ALLIANCE YOUTH MOVEMENT - - 2ND APPLICANT**
(A CIVIL SOCIETY ORGANIZATION)
NO. 43, BLOCK D, OKYEREKROM,
FUMESUA, NR. EJISU, KUMASI.
- 3. MACHO MEN FOR GOOD & JUSTICE.....-3RD APPLICANT**
(A NON PROFIT ORGANIZATION [NGO])
ADUM, WITHIN STANBIC BANK COMPLEX,
KUMASI.

VERSUS

ELECTORAL COMMISSION (EC) - RESPONDENT
RIDGE, ACCRA

STATEMENT OF CASE FILED FOR AND ON BEHALF OF APPLICANTS

MAY IT PLEASE YOUR LORDSHIP,

Of great concern to any nation is the upholding of the rule of law; in whatever form. The judiciary through the High Court has been the source where complaints are directed in seeking relief whereby peace may prevail.

We are before this honourable court with two major related issues of utmost importance

as a going concern for the stability of our sovereignty as a people, as a Nation. Ghana needs,

1. The Creation of credible Biometric Voters Register (BVR).; and
2. Enforcement of Political Parties (PP) Law.

Put simply, these are areas of the law put in the hands of the Electoral Commission (EC) the Respondent. We are inclined to say the EC has been rather apathetic in applying the law in such a way as would create a healthy electoral environment, which, resulting in a healthy electoral climate, would ensure peaceful elections.

With regards to issue one, the nation has invested heavily in the superior biometric technology in order to take its inherent advantages,

- (i) Of positive reinforcement of the belief of the country in Universal Adult Suffrage;
- (ii) Of identifying multi-identity of voters and help delete duplications.
- (iii) The biometric technology has a built in process or mechanism to clean the BVR.
- (iv) But this is achievable through the fusion of effective biometric laws and appropriate use to ascertain the number of valid votes cast in an election.

The Electoral Commission (EC) has stated, at different fora, as well as posted on its website how to use the Biometric Technology to create credible BVR. Even the EC has demonstrated during its recent exhibition from 18th July- 7th August, 2016, plus the extension, the process to achieve credible BVR.

What the plaintiffs would like to have explained, is why the EC is refusing to take initiative to have the law amended,(i.e. CI 91), to support the rightful application of the Biometric Technology in order to create credible BVR.

My Lord, by Credible BVR for elections, simply put, means, a register of Voters using the Biometrics of Voters, to identify a (living) Voter and his/her location in order to ascertain valid votes cast in an election. This by implication means a credible BVR must have the barest minimum of the dead in order to build confidence in the number of valid votes cast by the living at the respective locations/polling stations. This is inherent in the natural phenomenon of Death and Movement associated with humans.

We have already suggested in affidavit above that CI 91 has no Regulations to challenge the participation of the dead/deceased in our electoral process; and require the deletion of same from the BVR. It is estimated from Ghana Statistical

Services figure that the dead comprise approximately 4.5% of the Voters population.

Furthermore, the existence of the deceased estimated to be 4.5% of the voters' population thus renders the BVR **to be NOT** credible: the reason being that since no Presidential Candidates from 2004 elections has won by more than a margin of 4.5% above the 50% mark, (and have variously won by an average of 1.13%) with a standard deviation of 0.96.

Therefore suggested that with 4.5% of the voters being deceased and if not removed from the BVR, there is the high probability that the dead voters would be deciding election results; hence the need to order their removal.

To achieve credible BVR we have suggested an amendment to the law, CI 91, Regulation 23 (2a), as follows:

“Any existing registered voter who intends to cast his/her vote for impending elections (a) During the exhibition period (i) Shall place his/her fingers on the Automatic Finger Identification System (AFIS) in the presence of the Exhibition Officer and other stakeholders to ascertain that the particulars on the Voter’s Identification Card are the same as the particulars contained in the provisional register of voters (ii) The Exhibition Officer in the presence of other stakeholders will ascertain the facial and personal data of the Voter both on the AFIS and Voter’s Identification Card (iii) In case of any discrepancy, the Voter will request the Exhibition Officer to make the necessary correction in the provisional register”.

Why is the EC refusing to listen to good counsel from the same Ghanaians through whom the sovereignty and the powers of the Constitution reside? Is it mischief or indolence on the part of the EC refuses to use an effective law in a democratic endeavour to create credible BVR for the election, for this Nation?

No one is in doubt in Ghana about the need for a credible BVR for peaceful, free and fair elections on 7th December, 2016.

My Lord, this Honourable Court has a duty to compel the Respondent to initiate moves to have the law amended, as suggested, and to use the expensive biometric technology appropriately.

On issue two, after two successive elections since the inception of the 4th Republic and peaceful handover from the administration of one Political Party to another, the stakeholders of our Sovereignty found the need for an Act in conformity to the 1992 Constitution to regulate the formation and organization of PP in the year 2000.

The Constitution has laid down in Art. 55 (5)
(55) ORGANIZATION OF POLITICAL PARTIES
(5) The internal organization of a political party shall conform to democratic principles and its actions and purposes shall not contravene or be inconsistent with this Constitution or any other law.

Since every political party has the potential to govern or run the affairs of the Nation they are duty bound to demonstrate respect to the rule of law.

The EC on its own initiative reminded PP in August 2015 to comply with the PP law (Act 574, 2000); to meet some basic requirements under the constitutional and the law to achieve serious participatory multiparty democracy.

It is clear the EC has since failed or neglected to enforce compliance to the PP law and Constitutional provisions. [see exhibit JOY-2]

The EC is reneging on the compliance and by such inaction being complicit with the PP that failed to meet the deadline of 31st May, 2016 set by the letter from the EC itself; see exhibit JOY-1.

The inaction by the EC to enforce compliance of the PP law has rather nurtured pseudo militant groups (variously called vigilante groups) likely to destabilize the country if care is not taken.

The response by the EC to a follow up letter by the lawyer of the lead plaintiff is a clear contradiction of what it states to be doing against what it does in reality, to ensure achieving what it has stated.[see JOY-3]

The laws, CI 91, and ACT 574 of 2000, were intended to ensure political stability. However, there is a major flaw in CI 91 which we have addressed in this Motion; and seek the Reliefs stated herein. A refusal has the potential to bring unnecessary civil strife at polling stations.

Regarding ACT 574 of 2000, there is a proliferation of Political Parties because the Respondent is not enforcing compliance. The result is not only a drain on the national coffers, but an avenue for individuals to enrich themselves and create distractions.

The statistics of the number of polling stations on the website Respondent depicts a shortfall of 79 polling stations against the much publicised 29,000. The Respondent is suggested to clarify the difference and give details of its officers for respective polling stations.

The Respondent is being counselled to incorporate any agreed electoral process into CI especially, Electronic Transmission of Polling Results (ETPR). This will ensure effective law supports and regulates technology for positive and peaceful benefit for society.

DO WE NEED A CREDIBLE BIOMETRIC VOTER REGISTER? (BVR)

1.0 ISSUE ONE: CREDIBLE BIOMETRIC VOTER REGISTER FOR 2016 ELECTIONS.

Credible according to Cambridge International Dictionary, means, “Able, to be believed or trusted.”

Ghanaians are looking for nothing but a **CREDIBLE** BVR. Credible BVR connotes BVR that GHANAIAAN VOTERS can **BELIEVE** or **TRUST**. In other words BVR that Ghanaians can think that it is **TRUE, CORRECT** or **REAL**. BVR that Ghanaians can have confidence in its **HONESTY, GOODNESS** or **SAFETY** to use for the 2016 elections.

Biometric identifiers are the distinctive, measurable characteristics used to label and describe individuals. Biometric identifiers include, but are not limited to fingerprint, palm veins, face recognition, DNA, palm print, hand geometry, iris recognition, retina and odour/scent.

BVR is a register of voters created by using processes involving the capture of biometrics of voters. The biometrics are stored in computer software as distinctive identifier data of individual voters.

All software data such as BVR must, as a matter of fact, undergo the process of Validation and Verification (V & V) in order to be considered as credible. (NASA DEFINITION OF V & V, 1990). See Appendix A.

A credible BVR data is built when the **INPUT** undergoes subjective (Voter **physical interactions**) biometric process to ensure the Voter's specification meets the 1992 Constitutional requirement of a Ghanaian Voter (Art. 42) and addresses the real world need of casting valid votes by the living voter and not the dead. The subjective process ensures if the EC is building the right BVR. This process is technically called **VALIDATION** by Computer Technical Experts.

RIGHT TO VOTE

42. Every citizen of Ghana of eighteen years of age or above and of sound mind has the right to vote and is entitled to be registered as a voter for the purposes of public elections and referenda.

Moreover, Credible BVR data **OUTPUT** must undergo Objective (**internal computer software interaction of Voters biometrics**) biometric process to ensure the **SOFTWARE**, double checks if the input specification, is error-free and promotes the **advantages of using the biometric technology** against any other technology.

However, the output biometric process cannot ensure if the data is useful as the objective analysis is based on the subjective input. This process is technically

called **VERIFICATION**.

As a matter of natural convention, effective laws are developed for the operation of all technologies; for the **SAFETY** of societies in order to prevent wrong use but to derive their optimal benefits.

So, we have laws that respectively regulate the usage and operation of Vehicles, Aeroplanes, guns etc. The respective laws are developed for the safety and benefits of societies for respective technologies. **Effective and credible law must therefore be enacted for BVR in order to ensure the safety of Ghanaians before, during and after elections.**

My Lord, by Credible BVR for elections, simply put, means, a register of Voters using the Biometrics of Voters, to identify a (living) Voter and his/her location in order to ascertain valid votes cast in an election.

This by implication means a credible BVR must have the barest minimum of the dead in order to build confidence in the number of valid votes cast by the living at the respective locations/polling stations. This is inherent in the natural phenomenon of Death and Movement associated with humans.

1.1. FACTS ABOUT THE CURRENT BVR

It is an undeniable fact that the current BVR has some “undesirables” due to unguarded subjective input process and the nature of biometric voter involving living human beings susceptible to death and movement with age/time.

1.11 The dead on the BVR by Ghana Statistical Service figure of 9 persons per 1000.

The dead of about 650,000 since 2012, i.e. over a 5year period, constitutes about 4.5% of 14,500,000 Voters population. This is quite significant looking at how close and the difference of about less than 1% to win an election since 2008. In 2008 election, the late President Mills won with 50.23%; and President Mahama won in 2012 elections with 50.7%.

In 2004, President Kuffour won by 52.45%. The average percentage for winning an election from 2004 to 2012 is 51.13% with standard deviation of 0.96. By implication, one needs a winning percentage of 53%, 53.59% and 54.25% for 95%, 99% and 99.9% confidence level respectively.

So an estimated 4.5% of deceased on the BVR is more than 99.9% confidence level (54.25%) that a presidential candidate wins an election, undisputed. The dead/deceased of such high percentage of 4.5% does not make the BVR credible.

The dead on the other hand create a high sense of distrust and engender a high temptation of possible ballot stuffing during elections. **The dead give a false sense of actual voting pattern and most importantly subjugate the true will of the people.** Elections are to express **the will of the living** and not the dead. As a matter of fact, **the will of a living voter with NHIS registration is more credible and important than the dead without the NHIS card for registration.**

My Lord, Most Election Management Bodies (EMB) use different lawful processes to ensure the dead on the Register of Voters are eliminated to the barest minimum. This is dependent on the employed technology and the existing infrastructure to support the creation of credible Voters' Register.

In the United Kingdom, the EMB uses the postal address infrastructure backed by the National Insurance data to eliminate the dead and possible relocation of Voters. Landlords are required to give details of Voters about, three months to elections. The EMB then use the postal system to send the Valid Voting Cards to Voters. Voters cast their votes by returning the cards on the day of election to their preferred candidate.

1.12 Identification and deletion of NHIS card registrants of 56,772 amounts to 0.4%

The burden of proof by the EC of the figure of 56,772 of NHIS card registrant is still not convincing but granted, this constitute about 0.4% of the Voters population.

1.13. Identification and deletion of minors and underage (figures not available)

The **PRESENCE OF MINORS** on the register is a **clear failure of stakeholders of our sovereignty** reneging our constitutional obligation of **protecting children against moral hazards** by corrupt adults as enshrined in the 1992 Constitution Article 28(d);

"Parliament shall enact laws as are necessary to ensure that- children and young persons receive special protection against exposure to physical and moral hazards"

Not only do we have to delete names of minors but we must enact laws to criminalise those who engineer minors on BVR.

The minors and underage population is about 45% of the total yearly population. Assuming one hundredth (100th) were criminally exposed morally onto the BVR will translate into 0.45%.

1.14. Identification and deletion of foreigners (figures not available)

The total foreigners' population is about 2.7% of the overall yearly population. The assumption of about a tenth on our voters register can give an estimated figure of about 0.27%

1.15 Alternative manual verification route of voting. (Pending Amendment of CI 75 to CI 94).

The impending abrogation of “No verification no vote” by the EC from CI75 is a recipe for greatest misunderstanding of distrust of credible voting. Without validating a voter CI94 will be an avenue for ballot stuffing machinations.

If the dead are not prudently deleted, most of them will rise from Awodome and Tafo cemeteries to deny the living voters their choice of governance.

My Lord, It will be difficult for a BVR bedevilled with about 5.62% “undesirables” to be considered credible.

1.2. DO WE HAVE EFFECTIVE LAW (CI 91) DEVELOPED TO ENSURE CREDIBLE BVR AND SAFETY UTILISATION?

For credible BVR, effective Biometric law for V& V must be developed for CORRECT, REAL and SAFE use of biometric data for elections.

CI91, Regulation 23 (Exhibition of Voter Register) is the technical Validation process to create Credible BVR. CI 91 R23 (2a)

*“(2) During the exhibition period; (a) any registered voter **may** inspect the provisional register of voters to ascertain that the particulars on the voter’s identification card are the same as the particulars contained in the provisional register of voters and in case of any discrepancy, request the exhibition officer to make the necessary correction in the provisional register.”*

1.21. My Lord, however, there is a great **omission of legal Voter Biometric interaction with Biometric Verification Device, (BVDs)** in R23 (2a) **Exhibition/Validation** process and thus defeats the very argument and advantages that caused the EC and in fact the stakeholders of our sovereignty to adopt this expensive technology as against the previous Optical Mark Recognition (OMR) technology used by the voter register for 2008 elections.

The superiority of Biometric technology is its **unique identification** of individuals irrespective of how the said individual changes his/her Biodata (name, age, sex, domicile, religion, ethnicity, profession etc.) and nationality.

Any exhibition/validation by the EC without legally employing biometrics subjectivity as omitted in Regulation 23(2a) defeats a very important and a critical process of creating a credible BVR.

This makes the law insufficient and defeats the constitutional declaration of our solemn belief of the Principles of Universal adult suffrage of ONE MAN/WOMAN ONE VOTE. It is the application of biometric technology in BVR that positively

reinforces universal adult suffrage.

Such great omission of legal biometric application in exhibition cannot be glossed over or ignored in good faith by any technically competent person in biometric technology applications such as BVR.

The EC might have in bad faith omitted this very important biometric process legally or lacked the critical appreciation and implication of this very omission. The very omission in CI91, R23 (2a) has generated **SELF- INFLICTED DISTRUST** and **UNSAFE UTILISATION** of the current BVR for 2016 elections.

The technical biometric omission and insufficient Legal Regulation is a great danger to lives and properties even before elections and more disastrous if left alone after elections.

1.22. We cannot overlook but it's too late in the day to talk about suspending the Exhibition/Validation which ended a while ago. In order to achieve a clean BVR, there is need to amend CI 91 Regulation 23 (2a) to reflect legal biometric application as follows;

2. Any existing registered voter who intends to cast his/her vote for impending elections (a) During the exhibition period

(i) Shall place his/her fingers on the Automatic Finger Identification System (AFIS) in the presence of the Exhibition Officer and other stakeholders to ascertain that the particulars on the Voter's Identification Card are the same as the particulars contained in the provisional register of voters

(ii) The Exhibition Officer in the presence of other stakeholders will ascertain the facial and personal data of the Voter both on the AFIS and Voter's Identification Card

(iii) In case of any discrepancy, the Voter will request the Exhibition Officer to make the necessary correction in the provisional register.

It is also instructive to note that voters are not compelled to go for exhibition by any existing law CI 91 R23(2a) that, " Any voter MAY inspect ...".

So we find the EC statement by the Deputy Commissioner, Amadu Sulley, at a national Police command conference in Accra (24 June, 2016) to employ (biometric verification device) BVD during exhibition though illegally, as insightful, and confirming our argument that there is an urgent need to amend CI 91, in terms as stated in paragraph 13 of our affidavit.

However, without the benefit of the necessary amendment to CI 91, R23 (2a), the EC's utterance is in bad faith of inaction/indolence; as the EC's endeavour may not yield any beneficial results.

The reported transcription of the speech by Amadu Sulley quoted on most media especially citifmonline.com (<http://citifmonline.com/2016/06/24/biometric-verification-will-feature-during-exhibition-exercise-ec/>) states;

“We are also bringing in the BVD’s, that is the biometric verification devices, which we normally use during elections, during voting,” he also said. Voters require biometric verification Speaking on the BVD’s that will be employed during the exhibition, Mr. Sulley said voters will be required to be verified biometrically during the exercise as this will help reduce most of the challenges associated with the BVD on Election Day. “Now we want people to come during the exhibition to be verified biometrically. This will at least address the situation where these challenges come on the E day [Election Day]... when you come during exhibition and this is done, you will be in a position to know ‘I’m okay’.” “If the machine is not able to recognize your finger, we will take note and find out what happened and put in place mechanisms to address this situation,” is during the exhibition that we are able to come up with a credible register or do the cleaning and there are various processes that lead to the cleaning of the voters’ register...whatever we are going to do next month, is going to be very legal and the processes will be clear. We can’t finish the exhibition before we come and say we are going to do another cleaning or we do cleaning before we get into the exhibition. The exhibition period is when we clean the register.”

The above statement by the commissioner in charge of operations speaks it all that, EC calls for an urgent amendment of R23(2a) of CI91 such that:

Voters need a legal compelling regulation for massive turnout during exhibition;
Voters need to be validated through verification by the BVDs;
Biometric exhibition/validation (BEV) is the only means to create credible BVR;
Exhibition/validation must never be completed until deleting all “undesirables”;
Exhibition/validation is the surest credible alternative to “No verification no vote law abrogation”.

Such exhibitions, historically, have had very low average turnout since 1992. Those who will avail themselves to go through the illegal BEV will still exist on the BVR with about 5.62% “undesirables” and nothing and absolutely nothing could be achieved creditably in terms of cleaning the register to render it credible for the 2016 elections. This is a great deceptive scheme by the EC and crude injustice to plunge the nation into chaos during and after the elections in particular.

1.23. UNNECESSARY COMPLEX BEV BY EC

My Lord, there is no Regulation in CI91 that makes provision for the deletion of the dead in particular from the BVR.

However, the EC is running currently an advert for citizens to send adverts of the dead/ death certificates of relations to its various offices so that they could be deleted in order to make the BVR more credible.

My Lord, Why this cumbersome process from the EC whilst the nation has invested enormously in a Biometric technology that is easily achieved through lawful BEV?

The same cumbersomeness that the nation avoided by discarding the OMR technology Register used for the 2008 election is what the EC is desperately employing during the 2016 Exhibition period.

The EC is deceptively putting a new wine in an old wineskin, definitely as the Holy Bible cautions (Mark 2:22) will burst to ruin both the wine and the wineskin. Likewise, the action of the EC has nothing good to offer except bursting the country in chaos during and after elections in particular.

It is of the outmost importance that a pragmatic, technical and legal process is adopted to delete all “undesirables”. This said process is none other than the Biometric Exhibition/Validation (BEV) amendment to CI91 Regulation 23 (2a).

Our collective failure to act concisely will rather endanger our lives just like the wrong use of any technology endangers society, the BVR technology is no different.

1.24. VERIFICATION LAW ADEQUATELY DEVELOPED IN CI91.

The irony of CI91, however, is the detailed enumeration of biometric Verification/ Certified BVR process as stated in Regulation 27 (2a & 2b). The law has been sufficiently developed to regulate technological application of verification.

CI 91 R27

(2) The procedure of certifying the register include the following:

- (a) Matching of fingerprints in the database of the commission by automatic fingerprint system;*
- (b) Examination of facial and personal data of all applications with multiple registrations by an adjudication supervisor of the commission.*

The caveat as noted by NASA which also conforms to computer axiom of garbage in garbage out is,

“Verification will help to determine whether the software is of high quality, but it will not ensure that the system is useful” (NASA V&V 1990).

And so despite the biometric verification process law R27 in CI91, it will not ensure

credible BVR without comparable input biometric validation process and law.

1.25. THE EC, IS IT INDOLENCE OR MISCHIEF?

One cannot but be tempted to believe that the EC is acting in bad faith for reasons known to its independent operation to have developed biometric detail verification law (R27) in CI91 both technically and legally but woefully omitted and insufficiently developed the law for the same critical BEV process which determines input specification.

BEV has the greatest detection and deletion advantage preferred to OMR voter register for 2008 election which necessitated the adoption of BVR. It would be dangerous and a travesty of justice to Ghanaians if the BVR technology is wrongly applied without legal BEV process.

Lastly, without, BEV, the impending abrogation of “No verification no vote” by the EC (CI75) is a recipe for greatest misunderstanding of distrust of credible voting and avenue for ballot stuffing machinations.

The EC is deceptively and illegally creating the scenario of using BEV to help clean the BVR. But it will not yield the needed level of cleaning. Because, there is no compelling law for voters to go for exhibition in order to be able to vote. The dead and minors and possible foreigners will still be on the register. The current amendment of CI75 to CI94 for manual Verification without BEV will create chaos during and after elections. The EC must be stopped from causing financial loss to the state and to setting the stage for electoral violence.

The polling station registration statistics, on the website of Respondent (<http://www.ec.gov.gh/register/registration-statistics.html>) depicts the existence of only 28,921 polling stations, short by 79 polling stations as against the publicised 29,000. The deficit number of polling stations is quite substantial.

The Respondent must as a matter of urgency correct the anomaly. In particular the Respondent must equally depict the details of all its Officers for the respective polling stations two weeks before the election on the 7th December, 2016.

The first Plaintiff, had earlier in a presentation, suggested to the imminent Panellists form by the Respondent about the need for concurrent Electronic Transmission of Polling Results (ETPR) to collation centres as well as the Respondent headquarters.

There was adequate time to have incorporated ETPR in Constitutional Instrument prior to its bidding advert in the newspaper.

The Respondent did not incorporate the ETPR into appropriate CI. This is another unclear adoption of technology that is not regulated by any law.

My Lord, Ghanaians are looking for lawful use of technology. We suggest, that, any intended electoral process by the Respondent, including Electronic Transmission of Polling Results must be incorporated and backed by a Constitutional Instrument (CI) for the 2016 elections.

The EC is misusing its guaranteed independence in the 1992 Constitution (Article 46) to cut the nose of participatory democracy to spite the face of the law in order to create chaos in the country.

INDEPENDENCE OF THE COMMISSION

46. Except as provided in this Constitution or in any other law not inconsistent with this Constitution, in the performance of its functions, the Electoral Commission, shall not be subject to the direction or control of any person or authority.

Our life as a nation is endangered if the quest for credible BVR is not prudently pursued. The only last straw to break the Camel's back of the stability of our nation is the bold and concise direction by this honourable Court to compel the Respondent on the amendment suggested. The triumph of rule of law in a democracy must not be murdered or even endangered. Nations that cowardly murder the law, live in self destruction afterwards.

The recent past Exhibition from 18th July- 7th August, has not been useful and has in fact cost us unnecessary expense, to the state. There is no law yet for the use of the BVD. The exhibition had no built in mechanism for removing the dead, the minors, and the foreigners as stated by EC. The EC has not achieved the creation of a credible BVR. Herein lies a potential danger; its containment lies in amendment to CI 91.

We pray this honourable court to do justice to the peace loving Ghanaians to compel the Respondent to amend as suggested in paragraph 13 of our affidavit and to re-open the Exhibition for another one week. This will give the opportunity for intended Voters during the 7th December, 2016 election to be verified to cast their votes. Failure of a voter to take advantage of this opportunity would imply the voter to be apathetic in participating in the elections.

The EC must also act immediately, to ensure that this amendment will not affect the application of any Regulation in CI91 for the smooth, safe and credible elections on 7th December 2016.

2. Enforcement of Political Parties (PP) Law (ACT 574, 2000).

2.1 INCREASING VIOLENCE CHARACTERISATION IN PP ORGANIZATIONS

My Lord, the Constitutional and lawful organization of PP is an important integral process towards meaningful multiparty and participatory democracy.

Ghana is witnessing an ever increasing characterisation of high levels of violence or abuse perpetrated against citizens during electioneering campaign by PP. Not even such violence is avoidable during respective internal elections of PP. The perpetration of violence in the sub-Region and around the Continent did not happen by accident; but through deliberate acts, commissions and omissions, neglect and unresolved incidents.

My Lord, the rising phenomenon of violence in the activities of PP is a great pointer to weakness in enforcing the constitutional requirement by PP organization and PP law, Act 574 of 2000.

My Lord, the country, after two successive elections since the inception of the 4th Republic and peaceful handover from the administration of one Political Party to another; the stakeholders of our Sovereignty found the need to enact an Act in conformity to the 1992 Constitution to regulate the formation, organization and responsibilities of PP in the year 2000.

After two successive elections since the inception of the 4th Republic and peaceful handover from the administration of one Political Party to another, the stakeholders of our Sovereignty found the need for an Act in conformity to the 1992 Constitution to regulate the formation and organization of PP in the year 2000.

The Constitution has laid down in Art. 55 (5)

(55) ORGANIZATION OF POLITICAL PARTIES

(5) The internal organization of a political party shall conform to democratic principles and its actions and purposes shall not contravene or be inconsistent with this Constitution or any other law.

Since every political party has the potential to govern or run the affairs of the Nation they are duty bound to demonstrate respect to the rule of law.

The EC on its own initiative reminded PP in August 2015 to comply with the PP law (Act 574, 2000); to meet some basic requirements under the Constitution and the law to achieve solemn participatory multiparty democracy.

It is clear the EC has since failed or neglected to enforce compliance to the PP law and

Constitutional provisions. [See exhibit JOY-2]

The inaction by the EC to enforce compliance of the PP law has rather nurtured pseudo militant groups (variously called vigilante groups) likely to destabilize the country if care is not taken.

THE EC COMPLIANCE LETTER TO PP

The response by the EC to a follow up letter by the lawyer of the lead plaintiff is a clear contradiction of what Respondent claims to be doing, as against what it does in reality, to ensure achieving what it has stated.[see JOY-3]

The EC responded to our appeal to ensure compliance to PP law with a statement; *“Political Parties must be educated adequately on their obligations under the law and a sanction regime must be put in place backed by statute prior to enforcement. The timing and processes are within the discretion of the commission and we are working to finalise the process”.*

The EC had, itself earlier, on 5th May, 2016, reference C/EC.07/VOL3/225, (see exhibit JOY-1), sent a Reminder Letter to all the 26 Registered Political Parties as at the time to comply with the law in Act 574 , particularly, Article 21(1)(b), 14(2), 15(1)

21. (1) A political party shall, within six months from 31st December of each year, file with the Commission (b) audited accounts of the party for the year.

14. (2) A political party shall, within six months after a general or by-election in which it has participated, submit to the Commission a detailed statement in such form as the Commission may direct of all expenditure incurred for that election.

15. (1) Within ninety days after the issue to it of a final certificate of registration, a political party shall furnish the Commission with details of the existence and location of its national, regional, district and constituency offices.

However, the compliance is not only according to law but also a requirement under the 1992 Constitution as well; as stated in Article 55 clauses (5), 7(b), 14(a) & 14(b). Especially, Article 55(5) is explicit that noncompliance of the constitutional requirement or ANY OTHER LAW by PP is UNCONSTITUTIONAL.

(55) ORGANIZATION OF POLITICAL PARTIES

(5) The internal organization of a political party shall conform to democratic principles and its actions and purposes shall not contravene or be inconsistent with this Constitution or any other law.

(7) For purposes of registration, a prospective political party shall furnish the Electoral Commission with a copy of its Constitution and the names and addresses of its national officers; and shall satisfy the Commission that -
(b) the party has branches in all the regions of Ghana and is, in addition, organised in not less than two-thirds of the districts in each region; and

Declaration of assets, liabilities and expenditure in relation to elections.

(1 4) Political parties shall be required by law -
(a) to declare to the public their revenues and assets and the sources of those revenues and assets;
and
(b) to publish to the public annually their audited accounts,

The EC is reneging on the compliance and by such inaction deemed to be complicit with the PP that failed to meet the deadline of 31st May, 2016 set by the letter from the EC itself; see exhibit JOY-1.

The PP law Act 574 15(2a & 2b), further explain the Constitutional requirement of Article 55(7)

15(2) A political party shall also within the period specified in subsection (1) submit to the Commission

(a) the names, titles and addresses of its officers at the national, regional, district and constituency levels and also at such other levels of organization as the Commission may direct; and

(b) the name and address of the auditors of the political party.

The EC stated in a response to a letter to the lawyer of lead Plaintiff stating “**Political Parties must be educated adequately on their obligations under the law and a sanction regime must be put in place backed by statute prior to enforcement**”.

My Lord, does the EC issue certificate to PP without recourse to the law? As a matter of fact, if the above assertion from the EC is true, it is no wonder, most of the PP see forming vigilante groups to perpetrate violence on innocent Ghanaians as one of their rights.

My Lord, the EC per the above statement, seems to hold a different view and hopefully to let Ghanaians and this honourable Court to know the new statute other than the Constitution and PP law Act 574.

My Lord, if the EC has no respect for the Constitution and the existing statute, what was its intent in the letter to all PP on 5th May, 2016, reference C/EC.07/VOL3/225, whilst quoting some references of Act 574. See exhibit JOY-1.

THE EC IS NOT DISILLUSIONED WITH THE STATUTE

The Daily Graphic newspaper headline interview with the EC official showed that as at 2nd June, 2016 only seven parties had attempted meeting the constitutional requirement of two-third offices in all 216 districts (Article 55, 7b) in Ghana and Submission of audited accounts (Article 55, 14a&b)

The Senior Reporter of the Daily Graphic newspaper, Kobby Asmah, after interviewing EC stated; See exhibit JOY-2

“But as of the close of the deadline last Tuesday, only the Progressive People’s Party (PPP), the Convention People’s Party (CPP), the National Democratic Party (NDP), the Democratic People’s Party (DPP), the Great Consolidated Popular Party (GCPP), the Independent People’s Party (IPP) and the United Front Party (UFP) had met their obligations.”

The Director of Finance of the EC, Mr Joseph Kwaku Asamoah, expressed dismay at why the political parties would fail to comply with the laws of the land. Mr Asamoah said the law (Act 574) was explicit and unambiguous and had been in the statute since 2000 and that since the country was governed by political parties they must comply with the dictates of the law. “He who wants equity must come with clean hands” he said, and retorted that “if the EC had failed to comply with the provisions of the electoral law, the political parties would spare no effort at pouncing on the commission.”

“Political parties as public organisations which receive contributions from the public are enjoined to be accountable to the people” he said adding “the time has come to ensure the compliance of the provisions of the law for the sake of accountability and transparency in the organisation and operations of the parties as far as their finances are concerned.”

He said the EC served notices to all political parties to present their audited accounts to it for scrutiny in August, 2015 and cautioned them that it would crack the whip on them come January, this year. “But we are in June and most of the political parties have simply failed to comply.

“We cannot sit aloof. The commission in its wisdom thinks we need to ensure compliance and the provisions of the law were not established yesterday. It has been in the statute books since 2000; there must be an end to the road,” he cautioned.

My Lord, the EC and its official have no iota of doubt, the very critical need to enforce compliance to the constitutional requirement Article 55 (7b),(14a)(14b). It is travesty of justice against Ghanaians that the justice system allows noncompliance political party to govern the country as the 1992 Constitution Article 55(5) stated categorically.

55) ORGANISATION OF POLITICAL PARTIES

(5) The internal organization of a political party shall conform to democratic principles and its actions and purposes shall not contravene or be inconsistent with this Constitution or any other law.

The failure of EC to enforce compliance to the constitution and PP law in Ghana had rather nurtured multiparty militant groups in our political system which is in dissonance to multiparty organisation as stipulated in Article 55 and democracy.

My Lord, we would like to remind the EC that noncompliance by the political parties is not only by Act 574 but by the constitution as well. The failure of EC to enforce the law is also tantamount to supervising unconstitutionality.

EC TO PROVIDE GAZETTED COMPLIANCE OF PP OFFICES

That the EC provides the gazetted compliance of 1992 Constitution Article 55, clauses 7(b), 14 (a) & (b) as well as the Act 574 clauses 15(1) (2), 21(1). Also the EC to provide gazetted documents of all PP in compliance with Act 574, Clause 21(1) for the years 2013, 2014, 2015 and 2016. This is in line with Act 574 Clause 13(1), (5).

Declaration of assets and expenditure by political parties.

13. (1) Every political party shall, within ninety days after the issue to it of a final certificate of registration under section 11 or such longer period as the Commission may allow, submit to the Commission a written declaration giving details of all its assets and expenditure including contributions or donation in cash or in kind made to the initial assets of the political party.

(5) The Commission shall, within thirty days after receipt of the declaration required under subsection (1), cause it to be published in the Gazette.

DOES THE EC HAVE DISCRETIONARY POWERS ON CONSTITUTIONAL MATTERS?

The EC rebutted our appeal letter for the enforcement of constitutional requirement and PP law with the following statement; ***“Political Parties must be educated adequately on their obligations under the law and a sanction regime must be put in place backed by statute prior to enforcement. The timing and processes are within the discretion of the commission and we are working to finalise the process”.***

We pray this honourable court to order the EC to apply Clauses 27 and 30(1,2,3,4) of Act 574 to any PP or Person for non compliance to the Constitution and the law. EC can apply sanctions for non-compliance.

27. (1) Without prejudice to the penalty provided for under section 31, where a political party contravenes any of the provisions of this Act and is convicted the High Court may order the Commission to cancel the registration of that political party.

(2) Where the registration of a political party is cancelled under subsection (1) no person shall

- (a) summon a meeting of members or officers of the political party;*
- (b) attend a meeting in the capacity of a member or officer of the political party;*
- (c) publish a notice or advertisement relating to a meeting of the party;*
- (d) invite persons to support the political party;*
- (e) make a contribution or loan to funds held by or for the benefit of the political party or accept a contribution or loan; or*
- (f) give a guarantee in respect of such funds*

30. (1) Any person who contravenes a provision of this Act commits an offence.

(2) Any person who in furnishing particulars or information required to be furnished by a political party or by him under this Act makes a statement which he knows to be false or which he has no reason to believe to be true or makes a false statement reckless whether it true or not commits an offence.

(3) An offence under this Act, unless otherwise specifically provided for, shall be punishable with a fine not exceeding ten million cedis or a term of imprisonment not exceeding two years or both.

(4) Where an offence under this Act is committed by a political party, every executive officer of that party shall also be guilty of that offence.

My Lord, the EC must explain to Ghanaians why it's reneging on its own compliance letter dated 5th April, 2016 reference C/EC.07/VOL3/225 to all the 26 Registered Political Parties as at the time. The EC is not disillusioned but their tardiness can only be interpreted as, at best being, mischievous or indolent. This is not acceptable; and the Honourable Court is being prayed to order them to comply with their Constitutional mandate; or face the wrath of this court.

We pray accordingly,

DATED AT ACCRA THIS 19TH DAY OF AUGUST, 2016.

.....

PETER KWAKU NTI, ESQ.
SOLICITOR FOR PLAINTIFFS/APPLICANTS

PETER KWAKU NTI, ESQ.
(BARRISTER & SOLICITOR, SUPREME COURT OF GHANA)
KWAKU NTI LAW CONSULT, "DIDA CHAMBERS"
H/No. MDN. 603, AKOSOMBO JUNC.NEW RD. MADINA-ACCRA
POB GP. 2518, ACCRA-GHANA. CELL: 0244462034
LIC. No. GAR.11563/16....CHAMBER: PP.0000289/15

THE REGISTRAR
HIGH COURT
ACCRA.

COPY FOR SERVICE ON WITHIN-NAMED RESPONDENT

APPENDIX

Interpretation

32. *In these Regulations, unless the context otherwise requires,*

“biographic information” means information required under regulation 13 (6) for purposes of establishing a person’s identity;

“certified register” means the final register after claims and objections have been determined;

“biometric information” means the electronic template derived from the measurement and analysis of unique human body characteristics including fingerprints, facial cuttings, eye retinas and irises and thumb measurements for the purpose of establishing a person’s identity,

“certified register” means the final register after claims and objections have been determined;

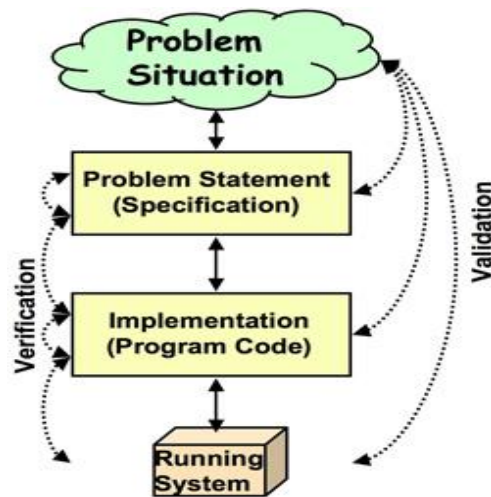
“political party active in the district” means a political party that has an office and elected officers in at least one constituency in that district;

APPENDIX A

NASA DEFINITION REFERENCE

<http://www.easterbrook.ca/steve/2010/11/the-difference-between-verification-and-validation/>

Sometime in the 1990's, I drafted a frequently asked question list for [NASA's IV&V facility](#). Here's what I wrote on the meaning of the terms "validation" and "verification":



The terms Verification and Validation are commonly used in software engineering to mean two different types of analysis. The usual definitions are:

- *Validation: Are we building the right system?*
- *Verification: Are we building the system right?*

In other words, validation is concerned with checking that the system will meet the customer's actual needs, while verification is concerned with whether the system is well-engineered, error-free, and so on. Verification will help to determine whether the software is of high quality, but it will not ensure that the system is useful.

The distinction between the two terms is largely to do with the role of specifications. Validation is the process of checking whether the specification captures the customer's needs, while verification is the process of checking that the software meets the specification.

Verification includes all the activities associated with the producing high quality software: testing, inspection, design analysis, specification analysis, and so on. It is a relatively objective process, in that if the various products and documents are expressed precisely enough, no subjective judgements should be needed in order to verify software.

In contrast, validation is an extremely subjective process. It involves making subjective

assessments of how well the (proposed) system addresses a real-world need. Validation includes activities such as requirements modelling, prototyping and user evaluation.

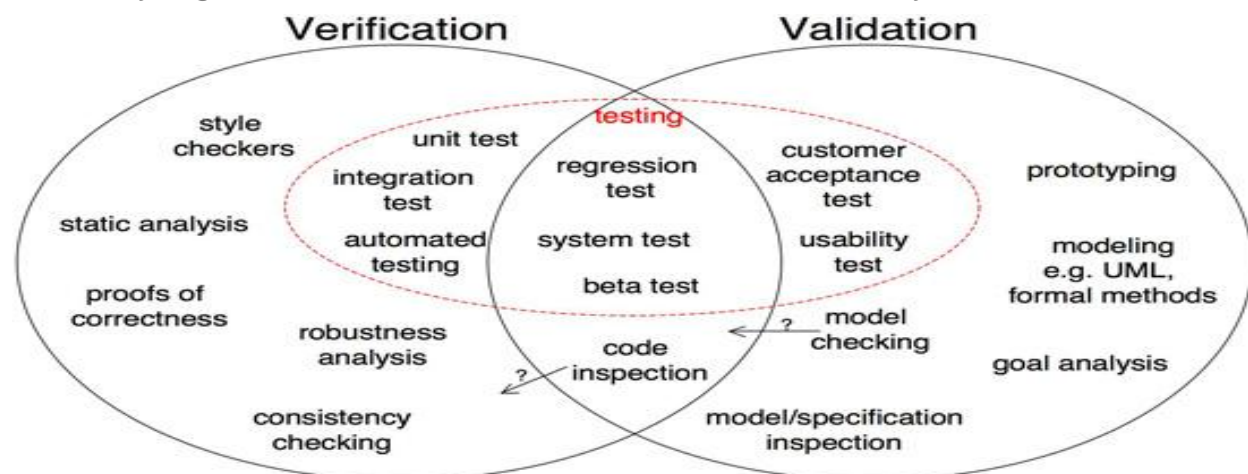
In a traditional phased software lifecycle, verification is often taken to mean checking that the products of each phase satisfy the requirements of the previous phase. Validation is relegated to just the beginning and ending of the project: requirements analysis and acceptance testing.

This view is common in many software engineering textbooks, and is misguided. It assumes that the customer's requirements can be captured completely at the start of a project, and that those requirements will not change while the software is being developed. In practice, the requirements change throughout a project, partly in reaction to the project itself: the development of new software makes new things possible. Therefore both validation and verification are needed throughout the lifecycle.

Finally, V&V is now regarded as a coherent discipline: "Software V&V is a systems engineering discipline which evaluates the software in a systems context, relative to all system elements of hardware, users, and other software". (from *Software Verification and Validation: Its Role in Computer Assurance and Its Relationship with Software Project Management Standards*, by Dolores R. Wallace and Roger U. Fuji, NIST Special Publication 500-165)

Having thus carefully distinguished the two terms, my advice to V&V practitioners was then to forget about the distinction, and think instead about V&V as a toolbox, which provides a wide range of tools for asking different kinds of questions about software. And to master the use of each tool and figure out when and how to use it. Here's one of my attempts to visualize the space of tools in the toolbox:

A range of V&V techniques. Note that "modelling" and "model checking" refer to building and analysing abstracted models of software behaviour, a very different kind of beast



from scientific models used in the computational sciences

For climate models, the definitions that focus on specifications don't make much sense,

because there are no detailed specifications of climate models (nor can there be – they’re built by iterative refinement like agile software development). But no matter – the toolbox approach still works; it just means some of the tools are applied a little differently. An appropriate toolbox for climate modelling looks a little different from my picture above, because some of these tools are more appropriate for real-time control systems, applications software, etc., and there are some missing from the above picture that are particular for simulation software. I’ll draw a better picture when I’ve finished analysing the data from my field studies of practices used at climate labs.

Many different V&V tools [are already in use](#) at most climate modelling labs, but there is room for adding more tools to the toolbox, and for sharpening the existing tools (*what* and *how* the subjects of my current research are). But the question of how best to do this must proceed from a detailed analysis of current practices and how effective they are. There seem to be plenty of [people](#) wandering into this space, claiming that the models are insufficiently verified, validated, or both. And such people like to pontificate about what climate modellers ought to do differently. But anyone who pontificates in this way, but is unable to give a detailed account of which V&V techniques climate modellers currently use, is just blowing smoke. If you don’t know what’s in the toolbox already, then you can’t really make constructive comments about what’s missing.